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U.S. Army Corps
of Engineers
Construction Engineering
Research Laboratories



Environmental Compliance Assessment System (ECAS)

U.S. Army
Korea Supplement

In response to the growing number of environmental laws and regulations worldwide, the U.S. Army adopted an environmental compliance program that identifies compliance problems before they are cited as violations by the U.S. Environmental Protection Agency (USEPA).

Beginning in 1985, Major Army Commands (MACOMs) were required to conduct comprehensive environmental assessments of all installations on a 4-year cycle. The installations must also conduct a mid-cycle internal assessment, the Army mandated, through Army Regulation 200-1, one unified Army-wide assessment mechanism. The resulting system combines Federal, Department of Defense (DOD), and Army environmental regulations, along with documentation of good management practices and risk-management information, into a series of checklists that show (1) legal requirements and (2) which specific items or operations to review. Each assessment protocol lists a point of contact to help assessors review checklist items as effectively as possible.

The Worldwide ECAS manual integrates information from the *Overseas Environmental Baseline Guidance Document (OEBGD)*, published by DOD in October 1992. The Korea manual supplements Worldwide ECAS with current Korean laws and regulations, and suggested management practices. The system has been tested at Yongsan Army Garrison, Korea in November 1992. The manual is updated continually to address new environmental compliance laws and regulations.

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FOREWORD

This work was performed for U.S. Army Environmental Center (USAEC), under military interdepartmental purchase request (MIPR) number 3472, dated 4 May 1992. The USAEC technical monitor Dave Guldenzopf, SFIM-AEC-ECC.

The research was performed by the Environmental Compliance Modeling and Systems Division (EC) of the Environmental Sustainment Laboratory (EL), U.S. Army Construction Engineering Research Laboratories (USACERL). The Principal Investigator was Donna J. Schell, Environmental Compliance Protocol Team, CECER-ECP. Tina M. Beckler and Kathi M. Bowman, CECER-ECP, were Associate Investigators, assisted by Donald H. Wiggins. Research and translation was performed by Dr. Hock Soo Kwon. Dr. Diane K. Mann, CECER-ECP, is Acting Team Leader. Dr. William D. Goran is Acting Chief, CECER-EC, and Dr. Edward W. Novak is Acting Chief, CECER-EL. Donald Wiggins, and Dr. Diane K. Mann were the Principal Investigators,

LTC David J. Rehbein is Commander of USACERL and Dr. L. R. Shaffer is Director.

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NOTICE

This manual is intended as general guidance for personnel at certain U.S. Army installations in the Republic of Korea. It is not, nor is it intended to be, a complete treatise on the environmental laws and regulations of the Republic of Korea. Neither the U.S. Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information contained herein. For any specific questions about, or interpretations of, the legal references herein, consult appropriate legal counsel.

INTRODUCTION

Since 1962, the South Korean government has been committed to massive industrialization. National priority was placed on the development of certain industrial bases. For instance, in Ulsan, Pohang, and other designated areas, heavy industrial and chemical plants have been extensively developed. In Ulsan, the rapid industrialization has resulted in the proliferation of numerous types and sizes of pollution-producing plants involving such varied products and substances as: fertilizers, textiles, aluminum products, petrochemicals, steel smelting and fabrication, plastic chemicals, organic chemicals, paper and other pulp products, and electric power. Consequently, pollution-related health and environmental problems have increased exponentially. In Seoul, the burdens of rapid industrial modernization and the consequent attraction of large numbers of immigrants from provincial areas has resulted in severe environmental stress, manifested in one instance by the fact that the water from the Han River flowing through Seoul is not suitable for potable water.

In response to the growing size and severity of the pollution problem in Korea, the government has attempted at various times over the past 30 years (yr) to institute measures of pollution abatement. The initial focus on controlling the most obvious and serious examples of reckless pollution (mainly severe public health and safety issues and public nuisances), has in recent years become more wide ranging and inclusive. Recently, the government has placed heavy emphasis on formulating a *comprehensive* attack on the pollution problem. The most recent attempts to minimize pollution resulted in enacting a fairly comprehensive series of laws and promulgating regulations.

STRUCTURE OF GOVERNMENTAL REGULATIONS

Generally, there are three different types of national governmental regulations concerning the environment in Korea. The basic, most general level is that of environmental laws passed by the legislature. The laws contain general and certain specific requirements as set out by the legislature and also contain grants of authority to the cabinet offices of the President and the Prime Minister and to relevant administrative offices, such as the Ministry of Environment Administration and the Ministry of Agriculture, Fisheries, and Forestry. This authority enables these offices to promulgate regulations designed to implement the desires of the legislature as set out in the basic law.

The second level is the Presidential Decree. A decree is designed to fulfill the tasks set out in the basic law. The tasks include listing various permitted or prohibited activities as set out in the law and maintaining certain standards and other details concerning responsibility for setting standards and regulating enforcement activities.

The third and most specific level is the Ministerial Order or equivalent Decree of the Prime Minister. The relevant office fills in any missing specifics concerning types, standards, or levels that were not specifically mentioned in the prior two levels. It must be noted, however, that not all standards will be filled in on these three levels. Environmental pollution control is a subject in which there is an infinite amount of variations. Not all types of pollution can be specifically addressed in even these three levels of regulation. Typically, the ministry in charge of promulgating specific standards will also be given the authority to change, adjust, modify, or promulgate standards for certain pollution problems that it is confronted with in the future.

MAIN LAWS AND REGULATIONS

Under the organization of the new 1990-1991 laws, decrees, and orders, the main aspects of environmental law are contained in six basic sections (one deals with penal provisions and will not be discussed here). The other laws are those dealing with environmental issues that are not of a basic, physical environmental nature. The following is a list of the 1990-1991 laws and regulations:

1. Environmental Policy Fundamental Law (Law No. 4257, 1 August 1990)
2. Air Environment Preservation Law (Law No. 4262, 1 August 1990)
3. Water Environment Preservation Law (Law No. 4260, 1 August 1990)
4. Hazardous Chemical Substances Management Law (Law No. 4261, 1 August 1990)
5. Noise/Vibration Control Law (Law No. 4295, 1 August 1990)
6. Sewage, Night Soil, and Livestock Wastewater Management Law (Law No. 4364, 8 March 1991)
7. Waste Management Law (Law No. 4363, wholly amended, 8 March 1991).

Pre-1990 Laws:

1. Public Health Act (Law No. 3822, 10 May 1986 as amended through Law No. 4106, 31 March 1989)
2. Environment Preservation Act (Law No. 3078, 31 December 1977 as amended through Law No. 3903, 31 December 1986)
3. Agricultural Pesticide Management Law (Law No. 445, 28 August 1957 as amended through Law No. 4109, 31 March 1989)
4. Cultural Properties Protection Law (Law No. 961, 10 January 1962 as amended through Law No. 4031, 26 December 1988).

Each of these basic laws (except the Environmental Policy Fundamental Law) has its own specific Presidential Decrees and Decrees of the Prime Minister (Ministerial Orders) that provide the specific standards, levels, and testing procedures to enable implementation of the laws. The laws are summarized in specific sections in this manual when relevant.

BASIC POLICY

A main goal of the new environmental legislation, as stated in the Environment Policy Fundamental Law, is to "prevent hazards from environment contamination and to manage and preserve natural and human environment appropriately by stipulating the rights and duties of the people and the responsibilities of the nation." Specifically, the purpose of environmental legislation is to "provide [a] pleasant natural environment through its qualitative improvement and to maintain harmony and balance between human and environment (because of the environment's) indispensability for public health." Because of this stated correlation between environmental concerns and the public welfare, "national and local governments, businessmen, and individuals [shall all] make efforts to maintain [a] favorable environment and place priority on environment preservation before everything else whenever the environment is involved."

The law stipulates that the prior basic law, the Environment Preservation Act of 1977, is superseded, except for certain parts. Those articles that are preserved in the new scheme are contained in Articles 9, 9-2, and 69-1, which concern management of the natural environment, and Articles 43 and 46, which concern expense liability.

BASIC ENVIRONMENTAL DEFINITIONS

(Contained In Environmental Policy Fundamental Law)

- *Environment* - natural and human environment.
- *Environmental Contamination* - air pollution, water pollution, soil contamination, radioactive pollution, noise, vibration, odor, etc., that are caused by commercial or residential activities.
- *Environment Effect Evaluation Report* - a report to be prepared by designated proxies or by "anyone whose business involves development of towns, industrial complexes, energy, ports, road, marine resources," and other specified activities. This report contains information on the proponent's plan in regard to the activity's probable effect on the environment. It also includes opinions of the residents who may be affected by the proponent's activities. Adjustment to the proposed project may be made by the Minister of Environment Administration should the Ministry determine that the project conflicts with environment preservation.
- *Environment Inspector* - person in charge of monitoring waste producing facilities. There are Environment Inspectors for the Ministry of Environment Administration, the special city of Seoul, the cities under direct control of the national government, and the provinces.
- *Environment Management Plan* - the new scheme for environmental affairs set out in the Environment Policy Fundamental Law. Generally, this plan includes provisions for setting environmental standards, implementation techniques for these standards, promotion of environmental technology, inspection of environmental contamination, regulation of the sources of environmental contamination, measures for natural environment preservation, and evaluation of environmental effects of actions that will probably have an impact on the environment.
- *Environmental Preservation* - the activities that are aimed at protecting the environment from contamination, ameliorating the damaged environment, and managing the environment in a way to keep it in a healthy state.
- *Environment Preservation Advisory Committee* - a committee that is charged with providing technical advice for environmental management. The Central Environment Preservation Advisory Committee is under the control of the Minister of Environment Administration, and local Environment Preservation Advisory Committees are under the control of the mayor of a city or the governor of a province.

- *Environment Preservation Association* - this is a juridical body formed in order to promote the research and technological developments on environment preservation education and public awareness of environment preservation.
- *Environment Preservation Committee* - formed under the control of the Prime Minister, its task is to deliberate the Master Plan and the principal environment management policies of the national government.
- *Environmental Standards* - standards promulgated in the Presidential Decree for this law concerning air, general noise, airplane noise, river pollution, lake and marsh pollution, underground water pollution, and pollution along the coast.
- *Environment Technology Supervisory Board* - a panel formed by the Minister of the Environment Administration in charge of the technological evaluation regarding waste producing and waste disposal facilities.
- *Human Environment* - air, water, waste, noise, vibration, odor, etc. that relate to residential activities.
- *Master Plan* - a plan for environment preservation developed every 10 yr by the Minister of Environment Administration through discussion with heads of the national agencies. This plan is subject to approval of the Environment Preservation Committee.
- *Natural Environment* - Underground, surface (including sea), and aboveground natural substances, either organic or inorganic, that constitute nature.
- *Special Counter Measure Area* - an area, as determined by the Minister of Environment Administration, where significant environment contamination or marked ecosystem change is noticed or imminent.
- *Special Master Counter-plan* - a plan that may be established by the Minister of Environment Administration designed to improve the environment in a Special Counter Measure Area. The Minister may order the mayors and/or governors of the affected area to implement this plan.

REPUBLIC OF KOREA
CONTACT/LOCATION CODES

- (1) Directorate of Engineering and Housing (DEH)
- (2) Environmental Coordinator (EC)
- (3) Preventive Medicine Officer
- (4) Safety and Health Officer
- (5) Fire Department
- (6) Director of Logistics (DOL)
- (7) Fuels Management Officer (DOL/DEH)
- (8) Transportation/Maintenance Officer (DOL)
- (9) Chief of Operations and Maintenance (O&M)
- (10) Range Control (DPTMSEC)
- (11) Aviation Commander (DPTMSEC)
- (12) Director of Plans, Training, Mobilization, and Security (DPTMSEC)
- (13) Engineering, Plans, and Services (EP&S)
- (14) Wastewater Treatment Plant Supervisor (O&M)
- (15) Land Management Officer (DEH)
- (16) Building and Grounds Division (DEH)
- (17) Entomology Shop (DEH)
- (18) Transfer, Storage, and Disposal Facility (TSDF) Operators (DEH, DOL, DRMO)
- (19) Shop Activity Supervisor
- (20) Director of Contracting (DOC)
- (21) Public Affairs Office (PAO)
- (22) Staff Judge Advocate
- (23) Defense and Reutilization Marketing Office (DRMO)
- (24) Utilities Division (Interior Electric Shop)
- (25) Utilities Division (Exterior Electric Shop)
- (26) Master Planner (DEH)
- (27) Inspector General (IG)
- (28) School Principal
- (29) Installation Commander
- (30) Army/Air Force Exchange Service (AAFES)
- (31) Directorate of Personnel and Community Activities (DPCA)
- (32) Directorate of Resource Management (DRM), Internal Control
- (33) Golf Course Pesticide Shop
- (34) Civilian Personnel Office (CPO)



SECTION 1

AIR EMISSIONS MANAGEMENT

Section 1

AIR EMISSIONS MANAGEMENT

A. Applicability

This protocol is applicable to all U.S. Armed Forces installations in the Republic of Korea. It specifically applies to those installations with facilities that emit certain types and levels of air pollution.

B. National Laws and Regulations

These laws and regulations constitute one of the six main environmental areas in which new standards and practices have been introduced. The purpose of these legislation and regulations is to better facilitate the management of air pollution producing facilities in order to comprehensively control and/or reduce the types and amounts of air pollution. The laws provide for: the establishment of air pollution monitoring networks and the appropriation of land for these networks if necessary; the setting of permissible discharge standards of air polluting substances (including the provision of special standards for particularly sensitive areas); the setting of standards for those who build air pollution discharging facilities; the standards for building air pollution prevention facilities; and other standards and measures relating to the discharge of pollution into the air. The implementing regulations add substance to the grants of authority contained in the main law. The Ministry of Environment Administration sets standards and maintains monitoring and recordkeeping requirements.

- *Air Environment Preservation Law* (Law No. 4262, 1 August 1990)
- *Presidential Decree for the Implementation of the Air Environment Preservation Law* (Presidential Decree No. 13259, 28 January 1991)
- *Decree of the Prime Minister to Implement the Air Environment Preservation Law* (Decree of the Prime Minister No. 377, 2 February 1991)

C. Provincial Laws and Regulations

At the present time, no information is available concerning specific air pollution standards for provinces where Armed Forces installations are located.

D. Key Compliance Definitions

- *Air Pollutant Discharge Facilities* - facilities, machines, instruments, and other like items that discharge polluting materials harmful to the air (see Appendix 1-1).
- *Air Polluting Substance* - gaseous/particulate material or material with an offensive smell that causes air pollution. These include: particulate matters, bromine and its compounds, aluminum and its compounds, vanadium and its compounds, manganese and its compounds, iron and its compounds, zinc and its compounds, selenium and its compounds, antimony and its compounds, tin and its compounds, tellurium and its compounds, barium and its compounds, carbon monoxide, ammonia, nitric oxide, sulfur dioxide, hydrogen sulfide, methyl sulfide, mercaptans, amines, carbon tetrachloride, carbon disulfide, hydrocarbon, phosphorous and its compounds, boron and its compounds, aldehyde, benzene, styrene, acrolein, cadmium and its compounds, cyanide, lead and its compounds, chromium and its compounds, arsenic and its compounds, mercury and its compounds, copper and its compounds, chlorine and its compounds, fluoride, asbestos, nickel and its compounds, vinyl chloride, dioxane, phenol and its compounds, beryllium and its compounds, volatile-organic compounds, and PCBs.
- *Air Pollution Prevention Facilities* - facilities that remove or reduce the air-polluting substance from air pollutant discharge facilities. These include: gravitational devices to collect particulate matter, inertial devices to collect particulate matter, centrifugal devices to collect particulate matter, rinsing devices to collect particulate matter, screening devices to collect particulate matter, electrical devices to collect particulate matter, sonar devices to collect particulate matter, devices that absorb air polluting substances, devices that attach air-polluting substances, devices that directly combust air-polluting substances, catalytic devices, compressing devices, and other devices that are equivalent to or more efficient than those specified above. (NOTE: Prevention facility shall include the whole parts and equipment necessary for handling air-polluting substances such as hood, duct, ventilator, and pump.)
- *Air Pollution Prevention Facility Businessman* - a person whose prevention facility business is registered under Article 44 of the Air Pollution Prevention Law and who designs and executes the establishment or modification of an air pollution prevention facility.
- *Automobile Emission Standards* - these concern the following substances: Carbon Monoxide (CO), HC, smoke.
- *Businessman* - any person who has permission for the establishment or modification of an air pollutant discharge facility.

- *Clean Fuel* - liquid natural gas. A fuel used in the area or the facility defined by the Minister of Environment Administration.
- *Dust* - particulate material that floats, scatters, or descends into the air.
- *Flying Dust* - products emanating from the following activities:
 1. manufacturing or processing cement, lime, plaster, or cement-related products
 2. mining, manufacturing, or processing noniron substances
 3. manufacturing primary irons
 4. manufacturing fertilizer or forage
 5. construction.
- *Fuel Additives* - chemical substances, excluding those composed of carbon and hydrogen only, that improve the function of automobiles or decrease the substances discharged from automobiles. These include additives that improve octane value, additives that rinse parts, additives which clean parts by dispersion, additives that improve the octane value, additives that suppress smoke, additives that improve fluidity, multi-purpose additives, and other types of additives announced to be necessary for emission-gas control in the Official Gazette by the Minister of Environment Administration.
- *Gas* - gaseous substances that are generated by combustion, synthesis, decomposition, or physical properties of material.
- *Heavy Duty Automobiles* - automobiles, weighing more than 3 tons, used for a very large number of passengers or large amount of freight.
- *Joint Prevention Facility* - a facility, built with the approval of the Ministry of Environment Administration, that is designed and used for the joint treatment of the polluting substances generated from the pollution discharging facilities.
- *Light Duty Automobiles* - automobiles for a very small number of passengers or small amount of freight with an engine size (emission) less than 800 cc.
- *Low-Sulfur Fuel* - fuel that meets sulfur content standards. Use of this fuel may be mandated in certain circumstances.
- *Mayor or Governor* - the Mayor of the Special City of Seoul, mayors of the direct control cities, or governors of the provinces.
- *Offensive Smell* - to the unpleasant smell produced from hydrogen sulfide, mercaptans, amines, and other irritating gaseous substances.

- *Particulate Material* - minute solid or liquid particles of material that are generated by crushing, grading, heaping, reheaping, or any other mechanical treatment or by combustion, synthesis, or decomposition.
- *Passenger Automobiles* - ordinary passenger automobiles that have an engine size (emission) of 800 cc or larger and weigh less than 3 tons. This includes wagons.
- *Polluting Substances* - those substances considered in the assessment of fines under Article 19-1 of the Air Environment Pollution Law:
 1. SO₂
 2. Ammonia
 3. Sulfurized hydrogen
 4. Desulfurized carbon
 5. Dust
 6. Fluoric compound
 7. HCl
 8. Cl
 9. Cyanide compounds
 10. Offensive odor
- *Small Freight Automobiles* - ordinary freight automobiles with an engine size (emission) of 800 cc or larger and weighs less than 3 tons. This includes wagons, jeeps, and vans.
- *Smoke* - minute particulate material that is generated by combustion and is mainly composed of free carbon.
- *Soot* - solidified particles of free carbon with a diameter of 1 micrometer (µm) or more that are generated by combustion.
- *Special Counter Measures Areas* - areas of special concern for pollutant levels as described in Article 22 of the Environment Policy Fundamental Law as "area(s) where significant environment contamination or marked ecosystem change are noticed or contingent." The Minister of Environment Administration may prescribe and impose more rigid permissible discharge standards here than those set for newly built discharge facilities.

- *Specified Air-polluting Hazardous Material* - those air-polluting substances that are likely to become directly or indirectly harmful to the health or property of humans or to the growth of animals and/or plants. These include: cadmium and its compounds, hydrogen cyanide, lead and its compounds, polychlorinated biphenyls (PCBs), compounds of chromium, arsenic and its compounds, mercury and its compounds, copper and its compounds, chlorine, hydrogen chloride, fluoride, asbestos, nickel and its compounds, vinyl chloride, dioxane, phenol and its compounds, and beryllium and its compounds.
- *Two Wheel Automobiles* - motorcycles that have an engine size (emission) of 50 cc or larger and weigh less than 0.5 ton.

AIR EMISSIONS MANAGEMENT PROTOCOL GUIDANCE FOR WORKSHEET USERS

	REFER TO WORKSHEET ITEMS:	CONTACT THESE PERSONS OR GROUPS: (*)
All Installations	1-1 through 1-13	(1)(2)(4)(6)(7)(8)(9)(11)(13)(19)(22)
General Emisison Standards	1-14 and 1-15	(1)(2)(3)(9)
Fuel Burning Sources	1-16	(9)
Motor Vehicles	1-17	(2)(6)
Gasoline	1-18 and 1-19	(2)(6)(7)(30)
Fugitive Emissions	1-20	(1)(2)(4)(10)(11)(12)(13)(15)(16)
Special Countermeasure Zones	1-21	(1)(2)
Incinerators	1-22	(1)(2)(9)

(*)CONTACT/LOCATION CODE:

- (1) Directorate of Engineering and Housing (DEH)
- (2) Environmental Coordinator (EC)
- (3) Preventive Medicine Officer
- (4) Safety and Health Officer
- (6) Director of Logistics (DOL)
- (7) Fuels Management Officer (DOL/DEH)
- (8) Transportation/Maintenance Officer (DOL)
- (9) Chief of Operations and Maintenance (O&M)
- (10) Range Control (DPTMSEC)
- (11) Aviation Commander (DPTMSEC)
- (12) Director of Plans, Training, Mobilization, and Security (DPTMSEC)
- (13) Engineering, Plans, and Services (EP&S)
- (15) Land Management Officer (DEH)
- (16) Building and Grounds Division (DEH)
- (19) Shop Activity Supervisor
- (22) Staff Judge Advocate
- (30) Army/Air Force Exchange Service (AAFES)

**COMPLIANCE CATEGORY:
AIR EMISSIONS MANAGEMENT
Republic of Korea**

REGULATORY REQUIREMENT:	REVIEWER CHECKS:
<p>ALL INSTALLATIONS</p> <p>1-1. Determine actions or changes since previous review of air quality (GMP).</p> <p align="center">...</p> <p>1-2. Copies of all relevant Korean laws and regulations on air quality management should be maintained at the installation (GMP).</p> <p align="center">...</p> <p>1-3. Emission limitation and control standards may be issued by the Mayor of Seoul, the Mayor of Direct Control City, or a Provincial Governor in addition to those issued by the Environmental Administration (Air Environment Preservation Law, Article 3).</p> <p align="center">...</p>	<p>Obtain a copy of previous report and determine if noncompliance issues have been resolved. (1)(2)</p> <p align="center">...</p> <p>Determine if copies of the following regulations are maintained and kept current at the installation: (1)(2)(22)</p> <ul style="list-style-type: none"> - <i>Environmental Policy Fundamental Law.</i> - <i>Presidential Decree to Implement the Environmental Policy Fundamental Law.</i> - <i>Public Health Act.</i> - <i>Air Environment Preservation Law.</i> - <i>Presidential Decree for the Implementation of the Air Environment Preservation Law.</i> - <i>Decree of the Prime Minister to Implement the Air Environment Preservation Law.</i> <p align="center">...</p> <p>Determine if the base is subject to additional limitations and control standards issued by the Mayors or Provincial Governors. (1)(2)(11)(13)</p> <p>Verify that the installation is in compliance with additional limitations or standards. (1)(2)</p> <p align="center">...</p>

(1) Directorate of Engineering and Housing (DEH) (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (4) Safety and Health Officer (5) Director of Logistics (DOL) (6) Fuels Management Officer (DOL/DEH) (8) Transportation/Maintenance Officer (DOL) (9) Chief of Operations and Maintenance (O&M) (10) Range Control (DPTMSEC) (11) Aviation Commander (DPTMSEC) (12) Director of Plans, Training, Mobilization, and Security (DPTMSEC) (13) Engineering, Plans, and Services (EP&S) (15) Land Management Officer (DEH) (16) Building and Grounds Division (DEH) (19) Shop Activity Supervisor (22) Staff Judge Advocate (30) Army/Air Force Exchange Service (AAFES)

**COMPLIANCE CATEGORY:
AIR EMISSIONS MANAGEMENT
Republic of Korea**

REGULATORY REQUIREMENT:	REVIEWER CHECKS:
<p>1-4. Before the construction or modification of an air pollutant source, permission must be obtained from the Minister of Environment Administration (Air Environment Preservation Law, Article 10; Decree of the Prime Minister to Implement the the Air Environment Preservation Law, Articles 12 and 13).</p>	<p>Verify that permission has been obtained prior to the start of construction of an air pollutant source. (1)(2)(9)</p> <p>Verify that permission has been obtained prior to the modification of discharge facilities as follows: (1)(2)(9)</p> <ul style="list-style-type: none"> - when the facility is built in a Special Counter Measure Area and it is to be expanded - in areas other than special countermeasure zones when the expansion involves 50 percent or more than the total size of approved facilities of the same type and 30 percent for specified air polluting hazardous substances - when the total size of the expansion facility exceeds 50 percent of the existing size and 30 percent for specified air polluting hazardous substances - when the type and composition of fuels approved for usage is changed - when discharge facilities or prevention facilities are modified before the installation completion report is submitted - when the location of the discharge facility is changed. <p>Verify that modification reports have been submitted when: (1)(2)</p> <ul style="list-style-type: none"> - existing discharge facilities or prevention facilities are replaced by those with the same size and same type - ownership of discharge facilities or prevention facilities is changed - discharge or prevention facilities are closed - name of company or representative is changed - modification does not require permission. <p>Verify that modification reports include: (1)(2)</p> <ul style="list-style-type: none"> - the proper forms - a permission certificate for installing discharge facility - process blueprints, installation specifications and drawings for prevention facilities, and/or other documents demonstrating the details of the modification process.

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Republic of Korea**

REGULATORY REQUIREMENT:	REVIEWER CHECKS:
<p>1-5. When air pollutant sources are constructed or modified, air pollution prevention facilities must also be established to reduce discharged pollutants below permissible standards (Air Environment Preservation Law, Articles 11, 12, and 13; Decree of the Prime Minister to Implement the Air Environment Preservation Law, Articles 16, 17, 18, 19, and 20).</p> <p>...</p> <p>1-6. Upon the completion of air pollutant sources and prevention facilities, a report must be filed with the Minister of the Environment Administration within 15 days and an inspection of the facilities by the Minister must be allowed (Air Environment Preservation Law, Article 14; Decree of the Prime Minister to Implement the Air Environment Preservation Law, Article 21).</p> <p>...</p>	<p>Verify that sources of air pollutants are equipped with appropriate emission control devices unless: (1)(2)(9)</p> <ul style="list-style-type: none"> - the Minister of Environment Administration admits that the discharges are below permitted limits - the Decree of the Prime Minister allows for an alternative. <p>Verify that unless a design is used that has been prescribed by the Decree of the Prime Minister or approved by the Minister of Environment Administration, the prevention facility has been designed and executed by a registered prevention facility businessman. (1)(2)(9)</p> <p>Verify that if a joint prevention facility is built, the proper forms and the following documents were submitted to the local environment administration: (1)(2)</p> <ul style="list-style-type: none"> - a location map of joint prevention facility at a scale of 1:25,000 - installation specifications for each discharge facility estimating air-polluting substances with the volume of raw materials used, volume of product manufactured, and process blueprints for each - installation specifications and drawings for pipes connecting discharge facilities to a joint-prevention facility. <p>Verify that a joint-prevention facility has a certificate of approval from the head of the local environmental administration. (1)(2)</p> <p>Verify that when a joint prevention facility is closed or operation suspended, a report is submitted to the head of the local environment administration. (1)(2)</p> <p>...</p> <p>Verify that reports on the completion of air pollutant sources and prevention facilities have been filed with the Mayor/Governor or the head of the local environment administration, along with the certificate for installation. (1)(2)</p> <p>...</p>

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**COMPLIANCE CATEGORY:
AIR EMISSIONS MANAGEMENT
Republic of Korea**

REGULATORY REQUIREMENT:	REVIEWER CHECKS:
<p>1-7. Discharge/prevention facilities must be properly operated (Air Environment Preservation Law, Article 15-1; Decree of the Prime Minister to Implement the Air Environment Preservation Law, Articles 23 and 24).</p> <p>...</p> <p>1-8. Installations are required to monitor sources of air pollutants and joint prevention facilities and keep records (Air Environment Preservation Law, Article 22; Decree of the Prime Minister for the Implementation of the Air Environment Preservation Law, Article 38).</p> <p>...</p> <p>1-9. The Minister of the Environment Administration may order the restriction of operating hours, suspension of operation, or other restrictive measures (Air Environment Preservation Law, Articles 17 and 18; Decree of the Prime Minister to Implement the Air Environment Preservation Law, Articles 28, 29, and 30).</p> <p>...</p>	<p>Verify that: (2)(9)(13)</p> <ul style="list-style-type: none"> - prevention facilities are operated while discharge facilities are operating - air-polluting substances are not leaked because of erosion and wear of the facilities - neither air-control equipment nor bypass ducts are installed to bypass the treatment processes - machines and instruments relating to prevention facilities are in good condition. <p>Verify that the following records are kept for 3 years (yr): (2)(9)</p> <ul style="list-style-type: none"> - hours of operation for discharge/prevention facilities - discharge volume of air pollutants - management state of facilities - names of facility managers. <p>...</p> <p>Verify that monitoring records are kept for 3 yr. (2)(9)(13)</p> <p>...</p> <p>Determine if the installation has been issued a restriction by the Minister of the Environment Administration. (1)(2)</p> <p>Verify that the parameters of that restriction are being met by the installation. (1)(2)</p> <p>Verify that if relocation is required, a relocation plan has been submitted to the Mayor/Governor or the head of the local environment administration, which includes: (1)(2)</p> <ul style="list-style-type: none"> - relocation site - relocation schedule - location expenses. <p>...</p>

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**COMPLIANCE CATEGORY:
AIR EMISSIONS MANAGEMENT
Republic of Korea**

REGULATORY REQUIREMENT:	REVIEWER CHECKS:
<p>1-10. When a source of air contaminants or a prevention facility can not meet compliance standards, whether because of a need for facility improvement and modification or a break-down, a report with an improvement plan must be submitted to the Minister of the Environment Administration (Air Environment Preservation Law, Article 15; Presidential Decree to Implement the Air Environment Preservation Law, Article 4; Decree of the Prime Minister to Implement the Air Environment Preservation Law, Article 27).</p> <p>...</p> <p>1-11. In response to a noncompliance report and improvement plan, the Minister of the Environment Administration must examine the case and appoint a period of time in which the improvement is to be completed (Air Environment Preservation Law, Article 16; Presidential Decree to Implement the Air Environment Preservation Law, Article 5; Decree of the Prime Minister to Implement the Air Environment Preservation Law, Article 26).</p> <p>...</p>	<p>Determine if there are air pollutant sources on the base that are not in compliance. (1)(2)(4)(6)(7)(8)(9)(11)(13)(19)</p> <p>Verify that a report and improvement plan has been submitted that includes when the improvement is to be made and the methodology to be used. (1)(2)</p> <p>...</p> <p>Determine if the installation is currently required to meet a time schedule for improvement. (1)(2)</p> <p>Determine if the installation has been granted an extension by the Mayor/Governor or the head of the local environment administration. (1)(2)</p> <p>Verify that any time schedules are being maintained. (1)(2)</p> <p>...</p>

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**COMPLIANCE CATEGORY:
AIR EMISSIONS MANAGEMENT
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REGULATORY REQUIREMENT:	REVIEWER CHECKS:
<p>1-12. Installations are required to have properly trained discharge facility managers (Air Environment Preservation Law, Article 24; Presidential Decree to Implement the Air Environment Preservation Law, Article 17; Decree of the Prime Minister to Implement the Air Environment Preservation Act, Article 47).</p> <p align="center">...</p> <p>1-13. Managers of discharge facilities or technical engineers in the anti-pollution industry or polluting substances monitoring agencies must take educational courses offered by the Minister of Environment Administration (Air Environment Preservation Law, Article 48; Decree of the Prime Minister to Implement the Air Environment Preservation Law, Articles 96 and 102).</p> <p align="center">...</p> <p>General Emission Standards</p> <p>1-14. Facilities on bases must not discharge air polluting substances from discharge facilities or joint prevention facilities (Air Environment Preservation Law, Articles 8 and 9; Decree of the Prime Minister to Implement the Air Environment Preservation Law, Articles 9, 10, and 20).</p> <p align="center">...</p>	<p>Verify that the discharge facility manager is properly trained as outlined in Appendix 1-2. (2)(9)</p> <p>Verify that where the average operating hours of the facility per actual operating day in a month exceeds 17 hours (h), more than one manager has been appointed. (2)(9)</p> <p>Verify that the discharge facility manager checks/does the following: (2)(9)</p> <ul style="list-style-type: none"> - improvement of discharge/prevention facilities - preparation and preservation of operations records - monitoring of discharge/prevention facilities and maintenance of monitoring records - maintenance of permissible limits of air emissions. <p align="center">...</p> <p>Verify that technical engineers or managers of discharge facilities take approved educational courses one or more times every 3 yr at one of the following: (1)(2)(9)</p> <ul style="list-style-type: none"> - the National Research Institute for the Environment - the Environment Preservation Association - other approved institution. <p>Verify that a list of technical engineers and/or managers of discharge facilities and their educational training are on file with the Mayor/Governor or the head of the local environment administration. (1)(2)</p> <p align="center">...</p> <p>Identify sources of air contaminants on base. (1)(2)(9)</p> <p>Determine if the Minister of the Environment Administration has issued restrictions to the installation concerning: (1)(2)</p> <ul style="list-style-type: none"> - areas to be controlled - substances to be controlled - plans to reduce the volume of air polluting substances - any other items. <p>Verify that the permissible discharge standards in Appendix 1-3 are met. (1)(2)(9)</p> <p align="center">...</p>

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**COMPLIANCE CATEGORY:
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REGULATORY REQUIREMENT:	REVIEWER CHECKS:
<p>1-15. Odors emitted from installation sources that are not otherwise regulated may be restricted (Air Environment Preservation Law, Article 30; Decree of the Prime Minister to Implement the Air Environment Preservation Act, Article 51).</p> <p style="text-align: center;">...</p> <p>Fuel Burning Sources</p> <p>1-16. Solid fuels or the incineration of solid fuels, including coals, cokes, recycled or processed fuels, or combustible wastes, are not allowed in specific areas (Air Environment Preservation Law, Article 27; Presidential Decree to Implement the Air Environment Preservation Law, Article 19).</p> <p style="text-align: center;">...</p> <p>Motor Vehicles</p> <p>1-17. Motor vehicles must not emit air pollutants in excess of the required limits (Air Environment Preservation Law, Article 36; Decree of the Prime Minister to Implement the Air Environment Preservation Law, Article 69).</p> <p style="text-align: center;">...</p>	<p>Verify that the standards in Appendix 1-4 are met. (1)(2)(3)(9)</p> <p style="text-align: center;">...</p> <p>Verify that solid fuels are not burned in the specified areas, unless: (9)</p> <ul style="list-style-type: none"> - mineral solid fuels are needed for facilities, such as melting furnaces for iron casting - the amount of polluting substances is decreased significantly by an absorbing/attaching device in the combustion process, such as cement or lime baking - a disposal facility with combustion or high-temperature decomposing devices is built with the permission of the Minister of the Environment - the permission of the Minister of the Environment is obtained through submitting documentation verifying that facilities are built and operated in order to minimized the polluting substances. <p style="text-align: center;">...</p> <p>Verify that installations' vehicles do not emit air pollutants in excess of the limits outlined in Appendix 1-5. (2)(6)</p> <p style="text-align: center;">...</p>

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REGULATORY REQUIREMENT:	REVIEWER CHECKS:
<p>Gasoline</p> <p>1-18. Automobile fuels being used at the installation must meet the standards prescribed by the Decree of the Prime Minister (Air Environment Preservation Law, Article 41; Decree of the Prime Minister to Implement the Air Environment Preservation Law, Articles 86 and 87).</p> <p align="center">...</p> <p>1-19. The use of automobile fuel additives may be restricted (Air Environment Preservation Law, Article 42-1; Decree of the Prime Minister to Implement the Air Environment Preservation Law, Articles 88 and 89).</p> <p align="center">...</p> <p>Fugitive Emissions</p> <p>1-20. Actions, including construction, that produce flying dust that does not pass through a definite outlet must be reported to the Minister of Environment Administration and a facility must be installed or measures taken to control the dust (Air Environment Preservation Law, Article 28; Presidential Decree to Implement the Air Environment Preservation Law, Article 21; Decree of the Prime Minister to Implement the Air Environment Preservation Law, Article 48 and 49).</p> <p align="center">...</p>	<p>Determine if the use of fuel has been restricted at the installation by the Minister of Environment Administration. (2)(6)(7)(30)</p> <p>Verify that the standards in Appendix 1-6 are met. (2)(6)(7)(30)</p> <p align="center">...</p> <p>Determine if automobile fuel additives are used at the installation. (2)(6)(7)(30)</p> <p>Verify that fuel additives are registered with the Minister of Environment Administration. (2)(6)(7)(30)</p> <p align="center">...</p> <p>Determine if the installation engages in any activities that would place it in the "flying dust business" category, as defined in Appendix 1-7. (1)(2)(4)(10)(11)(12)(13)(15)(16)</p> <p>Verify that installations engaging in flying dust related activities submit a report to the Mayor/Governor or the head of the local environment administration at least 10 days before the start of the activity. (1)(2)</p> <p>Verify that flying dust control measures described in Appendix 1-8 are used. (1)(2)</p> <p align="center">...</p>

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REGULATORY REQUIREMENT:	REVIEWER CHECKS:
<p>SPECIAL COUNTER-MEASURE ZONES</p> <p>1-21. Installations located in a special countermeasure zone may be required to meet more rigid emission standards (Air Environment Preservation Law, Article 8).</p> <p align="center">...</p> <p>INCINERATORS</p> <p>1-22. Rubber, leather, synthetic resin, or waste oil may not be burned in certain areas (Air Environment Preservation Law, Article 29; Decree of the Prime Minister to Implement the Air Environment Preservation Law, Article 50).</p>	<p>Determine if the base is located in a special countermeasure zone. (1)(2)</p> <p>Determine if any air pollutant sources on the base have been required to meet more stringent standards. (2)</p> <p>Verify that the more stringent standards are being met. (1)(2)</p> <p align="center">...</p> <p>Determine if the installation is in any of the following areas designated by the Decree of the Prime Minister: (1)(2)(9)</p> <ul style="list-style-type: none"> - industrial areas and green areas as defined in Article 17-1 of the Urban Planning Law - cultivation areas, forest preservation areas, industrial areas, development promotion areas, and reserved areas as defined in Article 6 of the Land Use and Management Law. <p>Verify that rubber, leather, synthetic resin, or waste oil is not being burned in these areas. (1)(2)(9)</p>

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Appendix 1-1

Types of Air Pollutant Discharge Facilities

- Metal manufacturing/processing facility
- Chemical product manufacturing/processing facility
- Rubber/plastic product manufacturing/processing facility
- Petroleum refining and petroleum/coal product manufacturing facility
- Nonmetal mineral product manufacturing/processing facility
- Leather product manufacturing/processing facility
- Wood product manufacturing/processing facility
- Paper product and tobacco manufacturing/processing facility
- Food manufacturing/processing facility
- Fabric product manufacturing/processing facility

- All facilities:
 - Power generating facility
 - all steam power generating facilities
 - power generating motors, 120 kilowatts (kw) or greater (excluding those for isolated regions such as islands, those for emergency, and portable ones)

 - Boiler
 - ordinary boiler, hourly evaporation rate: 0.2 ton or greater (excluding portable ones and those that use light-oil, kerosene, gasoline, naptha, or gas only)
 - incinerating boiler, hourly incinerating rate: 25 kilograms (kg) or greater

 - Incinerating facility
 - industrial waste incinerating facility, hourly incinerating rate: 25 kg or greater
 - ordinary waste incinerating facility, hourly incinerating rate: 100 kg or greater
 - waste gas incinerating facility, hourly incinerating rate: 100 kg or greater

(Notes: Classification of industrial waste and ordinary waste shall be based on the *Waste Management Law*.)

Appendix 1-2

Qualifications for the Manager of Discharge Facilities

Facility Type	Qualifications
Type 1 Plant	Air-specializing environmental engineer with Class 1 or higher certification.
Type 2 Plant	Air-specializing environmental engineer with Class 1 or higher certification or air-specializing environmental engineer with Class 2 certification who has experience in the field for 5 yr or longer.
Type 3 Plant	Air-specializing environmental engineer with Class 2 or higher certification.
Type 4 Plant	Person who acquired a permission of building discharge facility or employee working in the discharge or anti-pollution facilities designated by a person who acquired a permission of building discharge facility.
Type 5 Plant	Person who acquired a permission of building discharge facility or employee working in the discharge or anti-pollution facilities designated by a person who acquired a permission of building discharge facility.

NOTES:

Type 1 plant - The annual total of fuel consumption, when converted in terms of hard coal, is equal to 10,000 tons or greater.

Type 2 plant - The annual total of fuel consumption, when converted in terms of hard coal is between 2000 and 10,000 tons.

Type 3 plant - The annual total of fuel consumption, when converted in terms of hard coal, is between 1000 and 2000 tons.

Type 4 plant - The annual total of fuel consumption, when converted in terms of hard coal that is between 200 and 1000 tons.

Type 5 plant - The requirements for these facilities may be applied to plants that are exempted from the obligation of installing anti-pollution facilities or to plants that dispose of polluting substances at cooperative anti-polluting facilities.

When specially defined hazardous substances are discharged in Type 4 or 5 plants, the qualifications required for Type 3 plants shall be met.

When more than one manager has been appointed, the qualifications for Type 3 plants may be met for the additional manager.

Appendix 1-3

Permissible Discharge Standards

Substance	Discharge Facility	Until 31 Dec 1994	1 Jan 1995 to 31 Dec 1998	From 1 Jan 1999
Ammonia	Fertilizer manufacturing facility	150ppm or less	100ppm or less	50ppm or less
	Paint or dye manufacturing facility	100ppm or less	70ppm or less	70ppm or less
	Others	200ppm or less	200ppm or less	200ppm or less
Carbon Monoxide	Electricity generating facility or boiler - Liquid fuel using facility	350(4)ppm or less	350(4)ppm or less	350(4)ppm or less
	- Solid fuel using facility	400(6)ppm or less	400(6)ppm or less	400(6)ppm or less
	Incinerating facility	600(12)ppm or less	600(12)ppm or less	600(12)ppm or less
	Others	700ppm or less	700ppm or less	700ppm or less
Hydrogen Chloride	Chloric acid manufacturing facility	25ppm or less	15ppm or less	6ppm or less
	Phosphoric acid manufacturing facility	5ppm or less	2ppm or less	0.6ppm or less
	Fertilizer manufacturing facility	15ppm or less	10ppm or less	10ppm or less
	Acidic metal surface treatment facility	10ppm or less	5ppm or less	2ppm or less
	Incinerating facility	80(12)ppm or less	60(12)ppm or less	50(12)ppm or less
	Glass manufacturing facility	5ppm or less	2ppm or less	0.6ppm or less
	Others	10ppm or less	6ppm or less	6ppm or less

Appendix 1-3 (continued)

Substance	Discharge Facility	Until 31 Dec 1994	1 Jan 1995 to 31 Dec 1998	From 1 Jan 1999
Chlorine	Incinerating facility	80(12)ppm or less	60(12)ppm or less	60(12)ppm or less
	Others	10ppm or less	10ppm or less	10ppm or less
Sulfate (SO ₃)	Ordinary boiler			
	- Liquid fuel using facility	850(4)ppm or less	540(4)ppm or less	540(4)ppm or less
	Low-sulfur fuel using area			
	Other areas	1950(4)ppm or less	1950(4)ppm or less	540(4)ppm or less
	- Solid Fuel using facility			
	Area where solid fuel is controlled	500(6)ppm or less	250(6)ppm or less	250(6)ppm or less
	Other areas			
	Using domestic hard coal	1200(6)ppm or less	700(6)ppm or less	500(6)ppm or less
	Using other solid fuels	700(6)ppm or less	500(6)ppm or less	250(6)ppm or less
	Electricity generating facility			
	- Liquid fuel using facility			
	Capacity: less than 500MW	1200(4)ppm or less	1200(4)ppm or less	270(4)ppm or less
	Capacity: 500MW or larger	1200(4)ppm or less	540(4)ppm or less	270(4)ppm or less
	- Solid fuel using facility			
	Using domestic hard coal Pusan & Kangwon-do	1650(6)ppm or less	1650(6)ppm or less	270(6)ppm or less
	Other areas	1200(6)ppm or less	1200(6)ppm or less	270(6)ppm or less
	Using other fuels	700(6)ppm or less	500(6)ppm or less	270(6)ppm or less
	Metal smelting and processing furnace	650ppm or less	650ppm or less	650ppm or less

Appendix 1-3 (continued)

Substance	Discharge Facility	Until 31 Dec 1994	1 Jan 1995 to 31 Dec 1998	From 1 Jan 1999
	Sulfic acid manufacturing			
	- Combusting sulfurs	200(8)ppm or less	200(8)ppm or less	100(8)ppm or less
	- Others	500(8)ppm or less	200(8)ppm or less	200(8)ppm or less
	Fertilizer manufacturing facility	350(4)ppm or less	350(4)ppm or less	350(4)ppm or less
	Petroleum refining facility	800(4)ppm or less	500(4)ppm or less	300(4)ppm or less
	Cokes manufacturing facility	300(7)ppm or less	150(7)ppm or less	150(7)ppm or less
	Incinerating facility	300(12)ppm or less	300(12)ppm or less	300(12)ppm or less
	Incinerating facility	800ppm or less	500ppm or less	500ppm or less
	Liquid fuel using facility	250(4)ppm or less	250(4)ppm or less	250(4)ppm or less
	Solid fuel using facility	350(6)ppm or less	350(6)ppm or less	350(6)ppm or less
Nitrate (NO ₂)	Gaseous fuel using facility (pertaining only to electricity generating facility)			
	- Generating equipment	1200(13)ppm or less	950(13)ppm or less	950(13)ppm or less
	- Others	400ppm or less	400ppm or less	400ppm or less
	Others	200ppm or less	200ppm or less	200ppm or less
Carbon Disulfide	Rayon manufacturing facility	100ppm or less	100ppm or less	80ppm or less
	Others	30ppm or less	30ppm or less	30ppm or less

Appendix 1-3 (continued)

Substance	Discharge Facility	Until 31 Dec 1994	1 Jan 1995 to 31 Dec 1998	From 1 Jan 1999
Formaldehyde	All	20ppm or less	20ppm or less	20ppm or less
Hydrogen Sulfide	Petroleum refining facility	10ppm or less	6ppm or less	6ppm or less
	Pulp manufacturing facility	10ppm or less	5ppm or less	5ppm or less
	Others	15ppm or less	15ppm or less	15ppm or less
Fluoride (F)	Ceramics manufacturing facility	10(16)ppm or less	10(16)ppm or less	5(16)ppm or less
	Others	5ppm or less	3ppm or less	3ppm or less
Hydrogen Cyanide	All	10ppm or less	10ppm or less	10ppm or less
Bromide (Br)	All	5ppm or less	5ppm or less	5ppm or less
Benzene (C ₆ H ₆)	All	50ppm or less	50ppm or less	50ppm or less
Phenol (C ₆ H ₅ OH)	All	10ppm or less	10ppm or less	10ppm or less
Mercury (Hg)	All	5mg/Sm ³ or less	5mg/Sm ³ or less	5mg/Sm ³ or less
Arsenic (As)	All	3ppm or less	3ppm or less	3ppm or less

Appendix 1-3 (continued)

Substance	Discharge Facility	Until 31 Dec 1994	1 Jan 1995 to 31 Dec 1998	From 1 Jan 1999
Dust	Electricity generating facility or boiler			
	- Liquid fuel using facility			
	Emission gas $\geq 200,000\text{m}^3/\text{h}$	100(4)mg/Sm ³ or less	60(4)mg/Sm ³ or less	40(4)mg/Sm ³ or less
	Emission gas $\geq 30,000\text{m}^3/\text{h}$ < 200,000m ³ /h	150(4)mg/Sm ³ or less	100(4)mg/Sm ³ or less	50(4)mg/Sm ³ or less
	Emission gas $\geq 6,000\text{m}^3/\text{h}$ < 30,000m ³ /h	200(4)mg/Sm ³ or less	150(4)mg/Sm ³ or less	100(4)mg/Sm ³ or less
	Emission gas < 6,000m ³ /h	300(4)mg/Sm ³ or less	200(4)mg/Sm ³ or less	150(4)mg/Sm ³ or less
	- Solid fuel using facility			
	Emission gas $\geq 30,000\text{m}^3/\text{h}$	250(6)mg/Sm ³ or less	100(6)mg/Sm ³ or less	50(6)mg/Sm ³ or less
	Emission gas $\geq 6,000\text{m}^3/\text{h}$ < 30,000m ³ /h	250(6)mg/Sm ³ or less	150(6)mg/Sm ³ or less	50(6)mg/Sm ³ or less
	Emission gas $\leq 6,000\text{m}^3/\text{h}$	300(6)mg/Sm ³	150(6)mg/Sm ³	150(6)mg/Sm ³
	Incinerating facility			
	- Emission gas $\geq 40,000\text{m}^3/\text{h}$	100(12)mg/Sm ³ or less	80(12)mg/Sm ³ or less	80(12)mg/Sm ³ or less
	- Emission gas < 40,000m ³ /h	200(12)mg/Sm ³ or less	100(12)mg/Sm ³ or less	100(12)mg/Sm ³ or less
	Metal smelting and processing facility			
	- Electrical furnace	30mg/Sm ³ or less	20mg/Sm ³ or less	10mg/Sm ³ or less
	- Smelting furnace	70mg/Sm ³ or less	50mg/Sm ³ or less	50mg/Sm ³ or less
	- Sintering furnace	200mg/Sm ³ or less	70mg/Sm ³ or less	50mg/Sm ³ or less
	- Heating furnace	100(11)mg/Sm ³ or less	100(11)mg/Sm ³ or less	70(11)mg/Sm ³ or less
	Fertilizer, phosphoric acid or its compound manufacturing facility	70(10)mg/Sm ³ or less	70(10)mg/Sm ³ or less	50(10)mg/Sm ³ or less

Appendix 1-3 (continued)

Substance	Discharge Facility	Until 31 Dec 1994	1 Jan 1995 to 31 Dec 1998	From 1 Jan 1999
	Heating facility in petroleum-related chemical products manufacturing facility	70(4)mg/Sm ³ or less	50(4)mg/Sm ³ or less	50(4)mg/Sm ³ or less
	Cokes manufacturing facility	100(7)mg/Sm ³ or less	100(7)mg/Sm ³ or less	100(7)mg/Sm ³ or less
	Asphalt-concrete manufacturing facility	100(10)mg/Sm ³ or less	100(10)mg/Sm ³ or less	100(10)mg/Sm ³ or less
	Petroleum refining facility			
	- Catalytic reproduction facility	100(6)mg/Sm ³ or less	100(6)mg/Sm ³ or less	70(6)mg/Sm ³ or less
	- Sulfur removal facility	100(6)mg/Sm ³ or less	50(6)mg/Sm ³ or less	50(6)mg/Sm ³ or less
	- Heating facility	70(4)mg/Sm ³ or less	50(4)mg/Sm ³ or less	50(4)mg/Sm ³ or less
	Glass manufacturing facility			
	- Chaining tank furnace.	100(13)mg/Sm ³ or less	70(13)mg/Sm ³ or less	50(13)mg/Sm ³ or less
	- Others	100mg/Sm ³	70mg/Sm ³	50mg/Sm ³
	Ceramics manufacturing facility	100(16)mg/Sm ³	100(16)mg/Sm ³	70(16)mg/Sm ³
	Cement, lime, or plaster manufacturing facility			
	- Baking or drying facility	200(13)mg/Sm ³ or less	100(13)mg/Sm ³ or less	50(13)mg/Sm ³ or less
	- Cooling facility	100mg/Sm ³ or less	50mg/Sm ³ or less	50mg/Sm ³ or less
	Asbestos product manufacturing facility			
	- Fiber spouting/collecting or plate removal facility	30mg/Sm ³ or less	30mg/Sm ³ or less	30mg/Sm ³ or less
	- Others	100mg/Sm ³ or less	100mg/Sm ³ or less	100mg/Sm ³ or less
	Others	120mg/Sm ³	120mg/Sm ³	120mg/Sm ³

Appendix 1-3 (continued)

Substance	Discharge Facility	Until 31 Dec 1994	1 Jan 1995 to 31 Dec 1998	From 1 Jan 1999
Cadmium (Cd)	All	1.0mg/Sm ³ or less	1.0mg/Sm ³ or less	1.0mg/Sm ³ or less
Lead (Pb)	Metal smelting furnace or refining facility	20mg/Sm ³ or less	20mg/Sm ³ or less	10mg/Sm ³ or less
	Others	10mg/Sm ³ or less	10mg/Sm ³ or less	5mg/Sm ³ or less
Chromium (Cr)	All	1.0mg/Sm ³ or less	1.0mg/Sm ³ or less	1.0mg/Sm ³ or less
Copper (Cu)	Copper smelting facility	20mg/Sm ³ or less	20mg/Sm ³ or less	20mg/Sm ³ or less
	Others	10mg/Sm ³ or less	10mg/Sm ³ or less	10mg/Sm ³ or less
Nickel	All	20mg/Sm ³	20mg/Sm ³	20mg/Sm ³
Zinc (Zn)	Metal smelting electrical furnace or incinerating facility	30mg/Sm ³ or less	30mg/Sm ³ or less	30mg/Sm ³ or less
	Others	10mg/Sm ³ or less	10mg/Sm ³ or less	10mg/Sm ³ or less
Flying dust	All	1.5mg/Sm ³ or less	1.0mg/Sm ³ or less	0.5mg/Sm ³ or less
Smoke	All	Ringleman's rating: ≤ 2	Ringleman's rating: ≤ 2	Ringleman's rating: ≤ 2

Notes:

1. Numbers in the parenthesis represent percentage of oxygen (O₂).
2. Calculation of the volume of emission gas from boilers shall be based on the whole boilers installed in the facility. However, back-up boilers for emergency shall not be counted.
3. Indirect heating facilities using liquid or solid fuels in the "13. Others" category for the dust shall be subject to the standard for the "1. Boiler."

Appendix 1-4

Standards for Offensive Smell Control

Activity/Business	Standards
Agriculture or aquatic products wholesaling	Place shall be as enclosed as possible. Waste shall be disposed of as soon as possible. Waste collecting place shall be enclosed using screen or container-box. Water-cleaning shall be done as often as possible. Deodorants shall be sprayed. Wastewater from cleaning place or vehicles shall be slowed into wastewater processing facility. Wastewater processing facility shall be as enclosed as possible.
Printing	Low-odor solution shall be used. Workshop shall be enclosed and equipped with deodorizing devices. Improved method shall be devised for storage and retrieval of solution.
Others	Measures as functional as those listed above shall be devised.

(NOTE: "Others" in the category of Activity/Business are those that are not under control of the provision in Article 4 of the Decree of the Premier but are deemed by the Mayor or Governor to cause offensive smell.)

Appendix 1-5

Discharge Standards for Running Automobiles

Fuel used	Type of Automobile	Carbon Monoxide	Emission Pipe Carbonized Hydrogen	Smoke	Test Mode
Gasoline	Passenger automobile	1.2% or less	220 ppm or less	--	While idling
L.P.G.	Passenger automobile	1.2% or less	400 ppm or less	--	While idling
Gasoline L.P.G.	Light-duty, small-freight, heavy-duty automobiles	4.5% or less	1200 ppm or less	--	While idling
Light oil	Passenger, small-freight, heavy-duty automobiles	--	--	40% or less	During a sudden acceleration without charge

NOTES:

1. Any vehicle that uses any type of fuel with light oil is subject to this table.
2. An automobile transportation businessman shall make every effort to keep his automobiles under the discharge standards listed above.

Appendix 1-6

Manufacturing Standards for Automobile Fuel or Additives

Fuel Type	Item	From 2 Feb 91	From 1 Jan 93 to 31 Dec 92	From 1 Jan 96 to 31 Dec 95
Gasoline	Aromatic compounds (volume %)	--	55 or less	55 or less
	Benzene (volume %)	--	6 or less	5 or less
	Lead (g/L)	--	0.013 or less	0.013 or less
	Phosphorous (g/L)	0.0013 or less	0.0013 or less	0.0013 or less
	Oxygen (weight %)	--	0.5 or more	0.5 or more
Light oil	10% remaining carbon(%)	0.20 or less	0.20 or less	0.15 or less
	Sulfur (weight %)	0.4 or less	0.2 or less	0.1 or less

Appendix 1-7

Types of Business under Flying-Dust Control

Types of Industry	Types of Business
Cement, lime, plaster, or cement-related products manufacturing/processing industry	Cement manufacturing Lime manufacturing Ready-made concrete manufacturing Plaster manufacturing Concrete roof-brick-block manufacturing
Noniron material collecting/manufacturing/processing industry	Stone (building material) collecting Coal product manufacturing Gravel (construction materials) collecting Heat-resistant ceramic product manufacturing Glass or glass product manufacturing Porcelain, celadon, or pot manufacturing
Primary-metal manufacturing industry	Casting Steel product manufacturing
Fertilizer or fodder manufacturing industry	Fertilizer manufacturing Fodder manufacturing Grain flour manufacturing
Construction industry	Construction (Total floor space equal to or greater than 1000 m ²) Drilling (Total length equal to or greater than 200 m or total drilled-out soil equal to or greater than 200 m ²) Public work (Total structural volume equal to or greater than 1000 m ³ or construction area equal to or greater than 1000 m ²) Planning (e.g., beautifying the surroundings) (Total area equal to or greater than 5000 m ²) Destruction (Total floor space equal to or greater than 3,000 m ²) Others (Among those not listed above, (1) an activity the scale of which is equivalent to those defined above in the relevant category, or (2) a complex activity the total scale of which is equivalent to those defined above in the relevant category)
Construction sand transportation industry	Any vehicle in gravel collecting, building construction, drilling, public work, planning, or destruction business areas.

Appendix 1-8

Standards for Flying Dust Control

Place/Activities	Standards
Outdoor storing	<p>Flying dust cover shall be placed on top.</p> <p>Flying dust prevention wall shall be built that is at least 1/3 as high as the maximum height of piles stored outdoors, and flying dust prevention screen shall also be posted that is at least 25% higher than the maximum height of piles being stored outdoors.</p> <p>Water shall be applied on piles so that water-containing rate is maintained at 7-10%. (In cases where used steel is being piled, this requirement shall not be applied).</p> <p>Any device that is as or more functional than those listed above may be used.</p>
Loading or unloading radius (> 5m) Collected Dust	<p>Portable ventilator shall be equipped.</p> <p>Fixed or portable water-sprinkler (water pressure $\geq 3\text{kg}$, shall be equipped.</p> <p>No activities are allowed when wind blows 8 meters (m)/second (s) or faster.</p> <p>Any device that is as or more functional than those listed above may be used.</p>
Transportation (soil/sand transportation business is subject only to 1, 2, and 6.)	<p>Cover shall prevent spilling or flying of loaded dust.</p> <p>Maximum height of loading shall be 5 centimeters (cm) below the height of loading part of the vehicle.</p> <p>On unpaved road</p> <ul style="list-style-type: none"> - In cases where unpaved road is less than 1 kilometer (km) from the source of flying dust, the road shall be paved. - In cases where unpaved road is more than 1 km away from the source of flying dust and there is a residential structure with 10 or more households within a 500 m radius of the source of flying dust, unpaved road within a 1 km radius of the residential structure shall be paved. <p>Washing tires/vehicle</p> <ul style="list-style-type: none"> - Floor space of washing sink: 150% of vehicle or greater. - Depth of washing sink: 20 cm or deeper. - Length of washing sink: 200% of vehicle or longer. - Settling basin and pipes for used water. <p>Water sprinkler on the side.</p> <ul style="list-style-type: none"> - Height of sprinkler: shall cover from wheels to loading part. - Length of sprinkler: 150% of the length of vehicle. - Pressure of sprinkler: 3 kg/cm². <p>Transportation vehicle shall be driven only after wash.</p> <p>Any device that is as or more functional than those listed above may be used.</p>

Appendix 1-8 (continued)

Place/Activities	Standards
Transferring	Upper and lower parts and both ends of outdoor conveying facility shall be sealed to prevent dispersion of dust. In cases where both ends of conveying facility are sealed, a dust-collecting device shall be installed at the ventilation part. Any device that is as or more functional than those listed above may be used.
Mining	Water sprinkler (water pressure \geq kg/cm ²) shall be installed for regular cleaning. Hole drilled for explosive shall be covered before explosion. Any material that may decompose into dust shall be stored in a sealed container. Any device that is as much or more functional than those listed above may be used.
Outdoor Cutting	Cutting of used and the likes shall be done indoors if possible. Outdoor cutting area shall be equipped with screen to prevent dispersion of dust. Outdoor cutting area shall be equipped with ventilation device. No activities are allowed when the wind blows 8m/second or faster. Any device that is as much or more functional than those listed above may be used.

INSTALLATION:	COMPLIANCE CATEGORY: Air Emissions Management Republic of Korea	DATE:	REVIEWER(S):
STATUS NA C RMA	REVIEWER COMMENTS:		

(1) Directorate of Engineering and Housing (DEH) (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (4) Safety and Health Officer (5) Director of Logistics (DOL) (6) Fuels Management Officer (DOL/DEH) (8) Transportation/Maintenance Officer (DOL) (9) Chief of Operations and Maintenance (O&M) (10) Range Control (DPTMSEC) (11) Aviation Commander (DPTMSEC) (12) Director of Plans, Training, Mobilization, and Security (DPTMSEC) (13) Engineering, Plans, and Services (EP&S) (15) Land Management Officer (DEH) (16) Building and Grounds Division (DEH) (19) Shop Activity Supervisor (22) Staff Judge Advocate (30) Army/Air Force Exchange Service (AAFES)

SECTION 2

HAZARDOUS MATERIALS MANAGEMENT

Section 2

HAZARDOUS MATERIALS MANAGEMENT

A. Applicability

This protocol applies to those U.S. Armed Forces installations located in the Republic of Korea that store, transport, use, or dispose of specified hazardous chemical substances.

B. National Laws and Regulations

This law and its related regulations impose conditions and limits on the manufacture, import, sale, storage, transportation, availability, and use of certain chemicals determined to need special regulation. The law and regulations abolish the relevant provision of the old Environment Preservation Act (Article 28-2) and the entire Poisonous and Toxic Substances Law and its implementing regulations. Certain chemical substances otherwise considered hazardous are not regulated by this law and its implementing regulations. These substances are: radioactive materials as prescribed by the Atomic Power Law; medicines, pseudomedicines, and cosmetics prescribed by the Pharmacy Law; narcotics prescribed by the Narcotic Law; psychologically affecting medicines prescribed by the Psychologically Affecting Medicine Law; agricultural pesticides prescribed by the Agrochemical Management Law; and fertilizers prescribed by the Fertilizer Management Law. Much of this law is concerned with the proper manufacture and transport of the specified chemical substances by their manufacturers, sellers, or importers. However, some provisions of the law and implementing regulations may be applicable to particular installations. These sections describe the proper storage, handling, transport, use, registration, and method of disposal of certain specified hazardous chemical substances.

- *Hazardous Chemical Substance Management Law* (Law No. 4261, 1 August 1990)
- *Presidential Decree to Implement the Hazardous Chemical Substance Management Law* (Presidential Decree No. 13257, 28 January 1991)
- *Decree of the Prime Minister to Implement the Hazardous Chemical Substance Management Law* (Decree of the Prime Minister, No. 375, 2 February 1991)

C. Provincial Laws and Regulations

At this time, laws and regulations are unavailable for the provinces of Korea that contain military installations. The law and its regulations list no explicit duties governors of provinces must perform, nor do they list any actions governors can perform. Understandably, regulation of these hazardous materials should be uniform throughout the nation; and therefore, the regulations are devised and administered at the national level.

D. Key Compliance Definitions

- *Chemical Substance* - a compound produced by a chemical reaction of elements or compounds.
- *Poisonous Substance* - chemical substances that are harmful to public health or the environment (these are listed in Appendix 2-1).
- *Special Poisonous Substance* - a poisonous substance that is extremely harmful (these are listed in Appendix 2-2).

HAZARDOUS MATERIALS MANAGEMENT PROTOCOL GUIDANCE FOR WORKSHEET USERS

	REFER TO WORKSHEET ITEMS:	CONTACT THESE PERSONS OR GROUPS: (*)
All Installations	2-1 through 2-5	(1)(2)(3)(4)(5)(7)(11)(13) (16)(17)(18)(19)(22)(23)(30)(33)
Storage and Transportation	2-6 through 2-9	(1)(2)(3)(4)(5)(6)(8)(17)(30)(33)
Disposal	2-10	(1)(2)(4)(8)(9)(16)(17)(18)(19)(23)(30)(33)

(*)CONTACT/LOCATION CODE:

- (1) Directorate of Engineering and Housing (DEH)
- (2) Environmental Coordinator (EC)
- (3) Preventive Medicine Officer
- (4) Safety and Health Officer
- (5) Fire Department
- (6) Director of Logistics (DOL)
- (7) Fuels Management Officer (DOL/DEH)
- (8) Transportation/Maintenance Officer (DOL)
- (9) Chief of Operations and Maintenance (O&M)
- (11) Aviation Commander (DPTMSEC)
- (13) Engineering, Plans, and Services (EP&S)
- (16) Building and Grounds Division (DEH)
- (17) Entomology Shop (DEH)
- (18) Transfer, Storage, and Disposal Facility (TSDF) Operators (DEH, DOL, DRMO)
- (19) Shop Activity Supervisor
- (22) Staff Judge Advocate
- (23) Defense and Reutilization Marketing Office (DRMO)
- (30) Army/Air Force Exchange Service (AAFES)
- (33) Golf Course Pesticide Shop

**COMPLIANCE CATEGORY:
HAZARDOUS MATERIALS MANAGEMENT
Republic of Korea**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>ALL INSTALLATIONS</p> <p>2-1. Determine actions or changes since previous review of hazardous materials management (GMP).</p> <p style="text-align: center;">...</p> <p>2-2. Copies of all relevant laws and regulations on hazardous materials management should be maintained at the installation (GMP).</p> <p style="text-align: center;">...</p> <p>2-3. Installations should take any necessary measures for preventing environmental contamination from any industrial activities and observe environmental policies of the Korean National government and local governments (Environmental Policy Fundamental Law Article 5).</p> <p style="text-align: center;">...</p> <p>2-4. Installations are required to maintain records on hazardous chemical substances (Hazardous Chemical Substance Law, Article 21; Decree of the Prime Minister to Implement the Hazardous Chemical Substance Management Law, Article 26).</p> <p style="text-align: center;">...</p>	<p>Obtain a copy of previous report and determine if noncompliance issues have been resolved. (1)(2)</p> <p style="text-align: center;">...</p> <p>Determine if copies of the following regulations are maintained and kept current at the installation: (1)(2)(22)</p> <ul style="list-style-type: none"> - <i>Environmental Policy Fundamental Law.</i> - <i>Presidential Decree to Implement the Environmental Policy Fundamental Law.</i> - <i>Public Health Act.</i> - <i>Hazardous Chemical Substances Management Law.</i> - <i>Presidential Decree to Implement the Hazardous Chemical Substance Management Law.</i> - <i>Decree of the Prime Minister to Implement the Hazardous Chemical Substance Management Law.</i> <p style="text-align: center;">...</p> <p>Verify that the installation takes measures to prevent environmental contamination from industrial activities. (1)(2)(13)(19)(30)</p> <p style="text-align: center;">...</p> <p>Verify that records are maintained for 2 yr. (1)(2)(3)(4)(17)(19)(33)</p> <p>Verify that records include the name and quantity of the substance stored. (1)(2)(3)</p> <p style="text-align: center;">...</p>

(1) Directorate of Engineering and Housing (DEH) (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Pests Management Officer (DOL/DEH) (8) Transportation/Maintenance Officer (DOL) (9) Chief of Operations and Maintenance (O&M) (11) Aviation Commander (DPTMSEC) (13) Engineering, Plans, and Services (EP&S) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) Transfer, Storage, and Disposal Facility (TSDF) Operators (DEH, DOL, DRMO) (19) Shop Activity Supervisor (22) Staff Judge Advocate (23) Defense and Reutilization Marketing Office (DRMO) (30) Army/Air Force Exchange Service (AAFES) (33) Golf Course Pesticide Shop

**COMPLIANCE CATEGORY:
HAZARDOUS MATERIALS MANAGEMENT
Republic of Korea**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>2-5. If damage to public health or the environment occurs because of a hazardous substance, the installation may be required to report the incident to the public health center, police, fire department, or local environment or labor agencies (Hazardous Chemical Substance Management Law, Article 24).</p> <p style="text-align: center;">...</p> <p>STORAGE AND TREATMENT</p> <p>2-6. Managers of poisonous substances are required to take classes offered by the Poisonous Substance Management Association at least once every 2 yr (Hazardous Chemical Substance Management Law, Article 27; Decree of the Prime Minister to Implement the Hazardous Chemical Substance Management Law, Article 29).</p> <p style="text-align: center;">...</p> <p>2-7. Installations that keep, store, or transport hazardous chemical substances are required to register with the Minister of Environment Administration (Hazardous Chemical Substance Management Law, Article 10; Presidential Decree to Implement the Hazardous Chemical Substance Management Law, Article 9; Decree of the Prime Minister to Implement the Hazardous Chemical Substance Management Law, Article 8).</p> <p style="text-align: center;">...</p>	<p>Determine if the installation has had such an incident. (1)(2)(3)(4)(5)(7)(11)(16)(17)(18)(19)(23)(33)</p> <p>Verify that it was reported to the proper authorities, if required. (1)(2)(3)</p> <p style="text-align: center;">...</p> <p>Verify that the installation's poisonous substance manager attends the required classes. (2)(17)(19)(33)</p> <p style="text-align: center;">...</p> <p>Verify that the installation has registered the following information with the Minister of Environment Administration: (1)(2)(17)(30)(33)</p> <ul style="list-style-type: none"> - name of the installation - location of the installation - point of contact - type of operation - name of manager of hazardous substance. <p>(NOTE: Installations that fail to meet these requirements may be required by the Minister of Environment Administration to comply through an "improvement order" (Hazardous Chemical Substance Management Law, Article 16).)</p> <p style="text-align: center;">...</p>

(1) Directorate of Engineering and Housing (DEH) (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuel Management Officer (DOL/DEH) (8) Transportation/Maintenance Officer (DOL) (9) Chief of Operations and Maintenance (O&M) (11) Aviation Commander (DPTMSEC) (13) Engineering, Plans, and Services (EP&S) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) Transfer, Storage, and Disposal Facility (TSDP) Operator (DEH, DOL, DRMO) (19) Shop Activity Supervisor (22) Staff Judge Advocate (23) Defense and Readjustment Marketing Office (DRMO) (30) Army/Air Force Exchange Service (AAFES) (33) Golf Course/Pesticide Shop

COMPLIANCE CATEGORY:
HAZARDOUS MATERIALS MANAGEMENT
Republic of Korea

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>2-8. Installations that transport hazardous chemical substances may be required to register each substance with the Minister of Environment Administration (Hazardous Chemical Substance Management Law, Article 12; Decree of the Prime Minister to Implement the Hazardous Chemical Substance Management Law, Article 15).</p> <p style="text-align: center;">...</p> <p>2-9. Installations that use hazardous chemicals that may cause severe damage to residents and assets in the neighborhood may be required to stop using the chemical (Hazardous Chemical Substance Management Law, Article 17).</p> <p style="text-align: center;">...</p> <p>DISPOSAL</p> <p>2-10. Installations that dispose of hazardous chemical substances must dispose of them in a manner that will not jeopardize human health or the environment (Hazardous Chemical Substance Management Law, Article 25; Decree of the Prime Minister to Implement the Hazardous Chemical Substance Management Law, Article 28).</p>	<p>Determine if the installation is required to register any hazardous chemical substances with the Minister of Environment Administration. (2)(6)(8)</p> <p>Verify that the registration includes: (2)(8)</p> <ul style="list-style-type: none"> - name and unit size of the poisonous substance - amount of raw materials (manufacturers only) - monetary value of the poisonous substance (importers only) - terms of registration. <p>Verify that any related special requirements are followed. (2)(8)</p> <p>(NOTE: If registration of a substance has been revoked by the Minister of Environment Administration, it may not be registered again for 2 years (yr).)</p> <p style="text-align: center;">...</p> <p>Determine if the installation has been required to stop using any hazardous materials because of a threat to residents and assets in the neighborhood. (2)(3)(4)(5)</p> <p>Verify that the installation has fully complied with the request. (2)(3)(4)(5)</p> <p style="text-align: center;">...</p> <p>Determine if the installation disposes of hazardous chemical substances. (1)(2)(4)(8)(9)(16)(17)(18)(19)(23)(30)(33)</p> <p>Verify that hazardous chemical substances are disposed of in a manner that will not jeopardize human health or the environment. (1)(2)(4)(8)</p>

(1) Directorate of Engineering and Housing (DEH) (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuel Management Officer (DOL/DEH) (8) Transportation/Maintenance Officer (DOL) (9) Chief of Operations and Maintenance (O&M) (11) Aviation Commander (DPTMSEC) (13) Engineering, Plans, and Services (EP&S) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) Transfer, Storage, and Disposal Facility (TSDP) Operators (DEH, DOL, DRMO) (19) Shop Activity Supervisor (22) Staff Judge Advocate (23) Defense and Realization Marketing Office (DRMO) (30) Army/Air Force Exchange Service (AAFES) (33) Golf Course Pesticide Shop

Appendix 2-1

List of Poisonous Substances

CHEMICAL NAME and anything that has the chemical as an ingredient	Chemical is not regarded as hazardous if it falls under this PERCENTAGE AMOUNT (if given)
1. Sodium Peroxide	5
2. Hydrogen Peroxide	6
3. Urea Peroxide	17
4. Sodium	
5. B - Naphthol	1
6. I - Naphthyl methylcarbamate: Carbaryl, Sevin, Arylam	5
7. a - Naphthyl thiourea: ANTU, Bantu, Krysidi	
8. Lead compound (excluding Lead tetroxide, Lead sulfate, Basic Lead carbonate)	
9. Nickel carbonyl	
10. Nicotine	
11. Nitrobenzene	
12. 1-(4-Nitrophenyl)-3-(3-pyridylmethyl)urea: Priminil, Vacor	
13. 2,4-Dinitro-6-methyl propylphenyldimethyl acrylate: Binapacryl, Morocide	
14. 4,6-Dinitro-o-cresol: DNOC, Antinonnin, Sinox	
15. 3-(Dimethoxyphosphinyloxy)-N-methylisocrotonamide: Azodrin, Monocrotophos, Apadrin	
16. 0,0-Dimethyl 0-p-nitrophenyl thiophosphate: Methyl parathion, Methaphos, Metacide	
17. Dimethyl (E)-2-dimethylcarbamoyl-1-methylvinyl phosphate: Ektafos, Dicrotophos, Bidrin, Carbicron	
18. 0,0-Dimethyldibromo-1,2-dichloroethyl phosphate: Naled, Dibrom, Bromch' s	
19. 0,0-Dimethyl S-(1,2-diethoxycarbonylethyl)dithiophosphate: Malathion	
20. Dimethyl-2,2-dichlorovinylphosphate: Dichlorvos, DDVP	
21. Zinc dimethyldithiocarbamate: Zirem	
22. N,N-Dimethyl-2,2-diphenyl acetamide: Diphenamide	

Appendix 2-1 (continued)

CHEMICAL NAME and anything that has the chemical as an ingredient	Chemical is not regarded as hazardous if it falls under this PERCENTAGE AMOUNT (if given)
23. 1,1-Dimethyl-4,4-dipyridinium: Paraquat, Gramoxone	
24. 2,2-Dimethyl-2,3-dihydro-7-benzofuranyl-N-methylcarbamate: Carbofuran, Furadan, Curaterr	
25. 2,2-Dimethyl-2,3-dihydro-1-benzofuran-7-yl-N- (N-12-ethoxycarbonylisopropylsulfenamoyl) -N-methylcarbamate: Benfuracarb	
26. 0,0-Dimethyl S-(5-methoxy-2-oxo-1,3,4-thiodiazol-2(3H)- ylmethyl)dithiophosphate: Methidathon, DMTP	
27. 0,0-Dimethyl 0-(3-methyl)-4-nitrophenylthiophosphate: Fenitrothion, MEP, Sumithion	
28. Dimethyl (E)-1-methyl-2-(methylcarbamoyl)vinyl phosphate: Azodrin, Monocrotophos	
29. 0,0-Dimethyl S-methyl cerbamoylmethyl dithiophosphate: Dimethoate, Cygon	
30. 0,0-Dimethyl S-methylcarbamoylmethyl phosphorothioate: Omethoate, Folimat	
31. N,N-Dimethyl-2-methylcarbamoyloxyimino-2(methylthio) acetamide: Oxamyl, Vydate	
32. 0,0-Dimethyl (S-2-(1-methylcarbamoylethylthio)ethyl thiophosphate: Vamidothion	
33. 1-(2,2-Dimethyl-1-methylthiomethylpropylideneamino-oxy)-N- methylformamide: Thiofanox, Thiofanocarb, Dacamox	
34. 3,5-Dimethyl-4-methyl thiophenyl methylcarbamate: Methiocarb, Mercaptodimethur	
35. 0,0-Dimethyl 0-4-(methylthio)phenyl phosphorothioate: Baytex, Fenthion, MPP	2
36. Dimethyl (E)-1-methyl-2-(1-phenylethoxycarbonyl)vinyl phosphate: Crotoxyphos, Ciodrin	
37. 2,2-Dimethyl-1,3-benzodioxol-4-yl-methylcarbamate: Bendiocarb	
38. 0,4-Dimethylsulfamoylphenyl 0,0-dimethyl phosphorothioate: Famophos, Famphur	
39. 0,4-Dimethylsulfamoylphenyl 0,0-diethyl phosphorothioate: DSP, Kaya-ace	
40. 0,0-Dimethyl-0,4-sulfamoylphenyl phosphorothioate: Cythioate, Cyflee	
41. Dimethylsulfinylisopropyl thiophosphate	
42. 4-(Dimethylamino)-3,5-dimethylphenyl methylcarbamate: Mexacarbate, Zectran	
43. 2-Dimethylamino-5,6-dimethyl-4-pyrimidinyl dimethylcarbamate: Pirimor, Pirimicarb	

Appendix 2-1 (continued)

CHEMICAL NAME and anything that has the chemical as an ingredient	Chemical is not regarded as hazardous if it falls under this PERCENTAGE AMOUNT (if given)
44. 3-Dimethylaminomethyleneaminophenyl methylcarbamate: Formethenate, Dicarzol	
45. 0-[2-(Dimethylamino)-6-methyl-4-pyrimidinyl] 0,0-diethyl phosphorothioate: Pyrimithate, Pyrimitate, Diothyl	
46. p-Dimethylaminobenzenediazosulfonate	
47. 1-[(Dimethylamino)carbonyl]-5-methyl-1H-pyrazol-3-yl dimethylcarbamate: Dimetilan, Snip	
48. 4-Dimethylamino-m-tolylmethyl carbamate: Aminocarb, Matacil	
49. 0,S-Dimethylacetylphosphoramidothioate: Acephate, Orthene	
50. S-[[[(1,1-Dimethylethyl)thio]methyl] 0,0-diethyl phosphorodithioate: Terbufos, Counter	
51. 0,0-Dimethyl S-[(4-oxo-1,2,3-benzotriazin -3(4H)-yl)methyl]dithiophosphate: Azinphops-methyl, Guthion	
52. 5,5-Dimethyl-3-oxocyclohex-1-enyl dimethylcarbamate: Dimetan	
53. 3-[2-(3,5-Dimethyl-2-oxocyclohexyl)-2-hydroxyethyl] glutarimide: Cycloheximide, Actidione	0.2
54. 2-(2,2-Dimethyl-1-oxopropyl)-1H-indene-1,3(2H)-dione: Pindone, Pival	
55. Dimethyl-S-(p-chlorophenyl) thiophosphonate: DMCP, Fujithion	
56. Dimethyl 2,2,2-trichloro-1-hydroxyethylphosphonate: Dipterex, Trichlorfon, Chlophos	10
57. N,N-Dimethyl-1,2,3-trithian-5-ylamine: Thiocyclam(e), Evisekt	3
58. 1,3-Dimethyl-1-(5-trifluoromethyl-1,3,4-thiadiazol-2-yl) urea: Thiazafluron, Erbotan	
59. 3,5-Dimethyl-1,3,5-thiadiazinane-2-thione: Dazomet, Tiazon, Basamid	
60. Dimethylphenol: Xylenol	5
61. 3,5-Dimethylphenyl N-methylcarbamate: XMC, Macbal	3
62. 0,S-Dimethyl phosphoramidothioate: Methamidophos, Monitior, Tamaron	
63. 0,0-Dimethyl S-phthalimidomethyl phosphorodithioate: Phosmet, PMP, Imidan	
64. 2,6-Dibromo-4-[(4-nitrophenyl)azo]phenol: BAB	3
65. 1,2-Dibromoethane: EDB	50
66. 1,2-Dibromo-3-chloropropane: DBCP	
67. 2,3-Dibromopropionitrile	
68. Diacetoxyp propane: DAP	

Appendix 2-1 (continued)

CHEMICAL NAME and anything that has the chemical as an ingredient	Chemical is not regarded as hazardous if it falls under this PERCENTAGE AMOUNT (if given)
69. 4-Diallylamino-3,5-dimethylphenyl N-methylcarbamate: APC, Hydrol, Allyxcarb	
70. 0,0-Diethyl 0-p-nitrophenyl thiophosphate: Parathion	
71. S-2,5-Dichlorophenylthiomethyl 0,0-diethylphosphorodithioate: Phencapton	1.5
72. Diethyl-1-(2,4-dichlorophenyl)-2-chlorovinyl phosphate: Chlorbenvinphos	
73. 0,0-Diethyl 0-(2,4-dichlorophenyl)thiophosphate: Dichlofenthion, ECP, Nemacide	3
74. Diethyl 1,3-dithietan-2-ylidenephosphoramidate: Fosthiethan, Acconem, Geofos	
75. Diethyl 1,3-dithiolan-2-ylidenephosphoramidate: Phosfolan, Cyolane, Cylan	
76. Diethyl (4-methyl-1,3-dithiolan-2-ylidene)phosphoramidate: Mephosfolan, Cytrolane	
77. 0,0-Diethyl 0-(methylsulfinyl)phenyl]thiophosphate: Fensulfothion, Terracur-P, Dasanit	
78. Diethyl 5-methyl-3-pyrazolyl phosphate: Pyrazoxoan	
79. 0,0-Diethyl 0-(3-methyl-5-pyrazolyl)phosphorothioate: Pyrazothion	
80. Diethyl S-benzylthiophosphate: EBP, Kitzin	2.3
81. 0-2-Diethylamino-6-methylpyrimin-4-yl 0,0-diethyl phosphorothioate: Pirimiphos-ethyl, Pirimicid	
82. S-[2-(Diethylamino)ethyl] 0,0-diethyl phosphorothioate: Amiton, Tetram	
83. 0,0-Diethyl S-[2-(ethylthio)ethyl]phosphorodithioate: Disulfoton, Thiodemeton	
84. 0,0-Diethyl 0-[2-(ethylthio)ethyl]phosphorothioate mixture with 0,0-diethyl S-[2-(ethylthio)ethyl] phosphorothioate: Demeton, Systox, Mercaptophos	
85. 0,0-Diethyl 0-(3-oxo-2-phenyl-2H-pyridazin-6-yl) phosphorothioate: Pyridaphenthion	
86. 0,0-Diethyl S-i-propylcarbamoylmethyl phosphorodithioate: Prothoate, Fac	
87. 0,0-Diethyl 0-quinoxalin-2-yl phosphorothioate: Quinalphos, Bayrusil, Ekalux	
88. 0,0-Diethyl 0-(3,5,6-trichloro-2-pyridl) thiophosphate: Chlorpyrifos, Dursban, Lorsban	
89. Diethyl(5-phenyl-3-isoxazolyl)thiophosphate: Isoxathion, Karphos	
90. 0,0-Diethyl 0-1-phenyl-1,2,4-triazol-3-yl phosphorothioate: Triazophos, Hostathion	

Appendix 2-1 (continued)

CHEMICAL NAME and anything that has the chemical as an ingredient	Chemical is not regarded as hazardous if it falls under this PERCENTAGE AMOUNT (if given)
91. 0,0-Diethyl 0-pyrazin-2-yl phosphorothioate: Thiomazin, Nemafof, Cynem	
92. S,S'-(1,4-Dioxane-2,3-diyl) 0,0,0',0',-tetraethyldi (phosphorodithioate): Dioxathion, Delnav, Deltic	
93. 2-(1,3-Dioxolan-2-yl)-phenyl methylcarbamate: Dioxacarb, Elocron	
94. N,N''-Diisopropyl-6-methylthio-1,3,5-triazine-2,4-diamine: Prometryn(e), Gesagard, Caparol	
95. 0,0-Diisopropyl S-benzylthiophosphate: Kitazin, IBP, [probenfos]	
96. Diisopropyl S-(ethylsulfinylmethyl)dithiophosphate: Aphidan, IRSP	5
97. Diisopropyl fluorophosphate: Isofluorphate, DFP	
98. 1,3-Di(caramoylthio)-2-(N,N-dimethylamino)propane: Cartap, Padan, Cadan	2
99. 1,1-Dichloro-1-nitroethane: Dichloronitroethene, Ethide	
100. 2,4-Dichloro-6-nitrophenol	
101. Dichlorodinitromethane: GASPA, NET	
102. 0-2,5-Dichloro-4-(methylthio)phenyl 0,0-diethyl phosphorothioate: Chlorthiophos, Celathion	
103. 3,4-Dichlorobenzenediazothiurea: Chlorothiophos, Muritan, Promurit.	
104. Dichlorobenzoic acid	15
105. 1,4-Dichlorobutane	
106. Dichloroacetic acid	
107. Di(2-chloroisopropyl) ether	
108. (2,4-Dichlorophenoxy) acetic acid: 2,4-D, Hedonal, Trinoxol	
109. 3-(3,4-Dichlorophenyl)-1-methoxy-1-methylurea: Linuron, Methoxydiuron, Afalon	
110. 0-2,4-Dichlorophenyl 0-ethyl phenylphosphonothioate: EPBP, S-Seven	3
111. 1,3-Dichloropropene	
112. N-[(Dichlorofluoromethyl)thio]-N',N'-dimethyl-N- phenylsulphamide: Dichlofluanid, Elvaron, Euparen(e)	
113. 2-(Dimethylacetyl)-1H-indene-1,3(2H)-dione: Diphenadione, Diphacinone	
114. Dipropyl-4-methylthiophenyl phosphate: Kayophos, Propaphos	
115. 2,3-Dihydro-2,2-dimethylbenzofuran-7-yl(dibutylamin) methylcarbamate: Carbosulfan, Marshal	
116. 5,10-Dihydro-5,10-dioxonaphto[2,3-b]-1,4-dithin-2,3- dicarbonitrile: Dithianone, Delan	

Appendix 2-1 (continued)

CHEMICAL NAME and anything that has the chemical as an ingredient	Chemical is not regarded as hazardous if it falls under this PERCENTAGE AMOUNT (if given)
117. 1,2-Dihydro-3,6-pyridazinedione: Maleic hydrazide, MH	
118. 1L-(1,3,4/2,6)-2,3-Dihydroxy-6-hydroxymethyl-4- [(1S,4R,5S,6S.)-4,5,6-trihydroxy-3-hydroxy- methylcyclohex-2-enylamino]cyclohexyl-B-D- glucopyranoside: Validamycin (A), Validacin, Valimon	
119. Lasalocid	2
120. Rotenone	2
121. 2-Mesyl-2-Methylpropionaldehyde O-methylcarbamoyloxime: Aldoxycarb, Standak	
122. Ferric methanarsonic acid: MAF	
123. Calcium methanarsonic acid: MAC	
124. S-5-Methoxy-4-oxo-4H-pyran-2-ylmethyl 0,0-dimethyl phosphorothioate: Endothion, Endocide	
125. N-Methyl-N-(1-naphthyl)monofluoroacetoamide: MNFA, Nissol	
126. N-Methyl-2,4-dinitro-N-(2,4,6-tribromophenyl)-6- (trifluoromethyl)benzenamine: Bromethaline(e)	
127. Methyl N-(2,6-dimethylphenyl)-N-(2-methoxyacetyl) -DL-alaninate: Metalxyl, Ridomil, Apron	
128. Complex compound of calcium methyldichlorovinyl phosphate and dimethyldichlorovinyl phosphate: Carguophos	
129. Zinc methyldithiocarbamate	
130. 6-Methyl-1,3-dithiolo-[4,5,b]-quinoxalin-2-one: Chinomethionat(e), Quiomethionate, Morestan	
131. 1,1'-Methylenedi(thiosemicarbazide): Bisthiosemi Kayanex	2
132. 3-Methyl-1-(1-methylethyl)-1H-pyrazol-5-yl-dimethyl- carbamate: Isolan	
133. S-Methyl N-[(methylcarbamoyl)oxy]thioacetimidate: Methomyl, Lannate	
134. 2-(methylthio)propionaldehyde O-methylcarbamoyloxime: Aldicarb, Temik	
135. m-(1-Methylbutyl)phenylmethyl carbamate mixture with m-(1-Ethylpropylphenyl carbamate (3:1): Bufencarb, Bux, Metalkamate	
136. O-Methyl 0-(4-Bromo-2,5-dichlorophenyl)phenyl thiophosphate: Phosvel, Abar, Leptophos	
137. Methyl sulfonal	
138. S-(4-Methylsulfonyloxyphenyl)-N-methylthiocarbamate	
139. O-Methyl 0-cyclohexyl S-(p-chlorophenyl)thiophosphate: MHCP, Cerezin	
140. Methyl alcohol: Methanol	

Appendix 2-1 (continued)

CHEMICAL NAME and anything that has the chemical as an ingredient	Chemical is not regarded as hazardous if it falls under this PERCENTAGE AMOUNT (if given)
141. 3-Methyl-5-isopropylphenyl-N-methylcarbamate: Promecarb(e), Carbamult	
142. N-Methylcarbamyl-2-chlorophenol: Etrofol, CPMC, Hopcid	2.5
143. N'-(2-Methyl-4-chlorophenyl)-N,N-dimethylformamide: Chlorodimeform, Galecron, Fundal	3
144. 5-Methyl-1,2,4-triazolo[3,4-b]benzothiazole: Tricyclazole Beam, Blaside	4
145. 3-(Methylthio)butanone O-methylcarbamate: Butocarboxim (e)	
146. 2-(1-Methylpropyl)phenyl methylcarbamate: Bassa, BPMC, Fenobucarb	2
147. S-(2-Methyl-1-piperidyl carbonylmethyl)dipropyl dithiophosphate: Piperophos, Avirosan, Rilof	4.4
148. 2(4)-(1-Methylheptyl)-4,6(2,6)-dinitrophenyl crotonate: Dinocap, DPC, Mildex	
149. Methyl hydrazine	
150. Inorganic copper (excluding Fulminating copper and Copper fulminate)	
151. Inorganic gold (excluding Fulminating gold and Gold fulminate)	
152. Inorganic cyanide compound (excluding Ferric ferrocyanide, Potassium ferrocyanide, Potassium ferricyanide, Rhodan compound, and Calcium cyanamide)	
153. Inorganic zinc (excluding Zinc carbonate and Zinc fulminate)	
154. Inorganic silver (excluding Silver chloride and Silver fulminate)	
155. Inorganic tin	
156. Chromic anhydride	
157. Magnoliaceae illicium religiosum siebet zuec	
158. Barium compound (excluding Barium sulfate)	
159. Fuming sulfuric acid: Oleum	
160. Benzene	
161. S-2-Benzenesulphonamidoethyl O,O-diisopropylphosphorodithioate: Bensulide, Betasan, Prefar	
162. 2-Benzothiazol amine: 2-Aminobenzothiazol	
163. 1-Benzothiazol-2-yl-1,3-dimethylurea: Methabenzthiazuron, Tribunil	
164. 5-Benzyl-3-furylmethyl(IRS)-cis,trans-chrysanthemate: Resmethrin, Chryson, Benzyfurolin	
165. 2-Butanone: Methyl ethyl ketone, MEK	
166. 2-Butenal: Crotonaldehyde	
167. 3-Buten-2-one: Methyl vinyl ketone	
168. 6-tert-Butyl-2,4-dinitro-m-tolylacetate: Medinoterb acetate	
169. 2-sec-Butyl-4,6-dinitrophenol: Dinoseb, DNBP	
170. 2-tert-Butyl-4,6-dinitrophenol: Dinoterb	
171. 2-sec-Butyl-4,6-dinitrophenyl acetate: Dinoseb acetate, DNBPA	

Appendix 2-1 (continued)

CHEMICAL NAME and anything that has the chemical as an ingredient	Chemical is not regarded as hazardous if it falls under this PERCENTAGE AMOUNT (if given)
172. 2-sec-Butyl-4,6-dinitrophenyl isopropyl carbonate: Dinobuton, Acrex, Sytasol	
173. Butyl 2,3-dihydro-2,2-dimethylbenzofuran-7-yl N,N'-dimethyl-N,N'-thiodicarbamate: Furthiocarb, Deltanet	
174. Butyl-S-benzyl-S-ethyl dithiophosphate: Conen, BEBP	
175. N-tert-Butyl-6-chloro-N'-ethyl-1,3,5-triazine-2,4-diamine: Gardoprim, Terbutylazine	
176. 2-(p-tert-Butylphenoxy)cyclohexyl 2-propynyl sulfite: Propargite, Omite	
177. N-Butylpyrrolidine	
178. 2-Bromo-2-nitropropane-1,3-diol: Bronopol	
179. O-(4-Bromo-2,5-dichlorophenyl)O,O-diethyl phosphorothioate: Bromophosethyl, Nexagan	
180. N-(p-Bromobenzyl)monofluoroacetoamide	
181. 3-[3-(4'-Bromo[1,1-biphenyl]-4-yl)-1,2,3,4-tetrahydro-1-naphthaleny]-4-hydroxy-2H-1-benzopyran-2-one: Brodifacoum, Talon	
182. 3-[3-(4'-Bromobiphenyl-4-yl)-3-hydroxy-1-phenylpropyl]-4-hydroxycoumarin: Bromadiolone, Maki	
183. N-Bromo-N'-chloro-5,5-dimethylhydantoin: Halogenated hydantoin]	
184. O-4-Bromo-2-chlorophenyl O-ethyl S-propyl phosphorothioate: Profenofos, Curacron, Selecron	
185. 7-Bromo-6-chloro-3-[3-(3-hydroxy-2-piperidyl)-2-oxypropyl]-4(3H)-quinazoline: Halofuginone	
186. Bromo-2-propanone: Bromoacetone	
187. Bromine	
188. Methyl bromide	
189. Hydrogen bromide	
190. Ethyl bromide	
191. Arsenic	
192. O,O-Bis(4-chlorophenyl)N-acetimidoylphosphoramithioate: Phosacetim, Gophacide	
193. Mathylene bithiocyanate	
194. 3-(3-Biphenyl-4-yl-1,2,3,4-tetrahydro-1-naphthyl)-4-hydroxy-coumarin: Difenacoum, Ratak	
195. Carbon tetrachloride	
196. Hexaethyl tetraphosphate	
197. Bis[tris(2-methyl-2-phenylpropyl)tin] oxide: Fenbutatin oxide, Vendex, Osdaran	
198. Propylene oxide	
199. Sodium-2-pyrimidinethiol 1-oxide	

Appendix 2-1 (continued)

CHEMICAL NAME and anything that has the chemical as an ingredient	Chemical is not regarded as hazardous if it falls under this PERCENTAGE AMOUNT (if given)
200. 6,7,8,9,10,10-Hexachloro-1,5,5a,6,9,9a-hexahydro-6,9-methano-2,4,3-benzodioxathiepin 3-oxide: Endosulfan, Thioadan, Chlorthiepin	
201. Salinomycin	1
202. Molybdenum trioxide	
203. (3B,5Z,7E,22E)-9,10-Secoergosta-5,7,10(19),22-tetraen-3-ol: Calciferol, Vitamin D2, Ergocalciferol	
204. 9,10-Secocholesta-5,7,10(19)-trien-3-ol: Vitamin D3, Activated 7-dehydrocholesterol, Ebivit	
205. Selenium	
206. Sodium hydroxide	5
207. Tricyclohexatin hydroxide: Cyhexatin, TCTH, Plictran	
208. Triaryl tin hydroxide	2
209. Trilkyl tin hydroxide	2
210. Potassium hydroxide	5
211. Mercury	
212. Sulfonal	
213. Strychnidin-10-one: Strychnine	
214. (S)-a-Cyano-3-phenozybenzyl (1R,3S)-2,2-dimethyl-3-[(RS)-1,2,2,2-tetrabromoethyl]cyclopropanecarboxylate: Tralomethrin (e)	
215. (S)-a-Cyano-3-phenoxybenzyl(1R)-cis-3-(2,2-dibromovinyl)-2,2-dimethylcyclopropanecarboxylate: Deltamethrin, Decamethrin, Butox	
216. (RS)-a-Cyano-3-phenoxybenzyl (S)-2-(4-difluoromethoxyphenyl)-3-methylbutyrate: Flucythrinate, Cybolt, Cytrin	
217. a-Cyano-m-phenoxybenzyl-a-isopropyl-p-chlorophenyl acetate: Fenvalerate	
218. (RS)-a-Cyano-3-phenoxybenzyl N-(2-chloro-a.a.a-trifluoro-p-tolyl)-D-valinate: Fluvalinate, Mavrik	
219. (R,S)-a-Cyano-4-fluoro-3-phenoxybenzyl-(1R,S)-cis,trans-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxylate: Baythroid, Cyfluthrin, Cyfoxylate	0.5
220. Sodium cyanate	
221. Cyclotrimethylenetrinitramine: Cyclonite, RDX, Hexogen	
222. 2,5-Cyclohexadiene-1,4-dione: Quinone, 1,4-Benzoquinone	
223. 2-Cyclohexyl-4,6-dinitrophenol: Dinex, DN	0.5
224. Aniline	
225. 5-Amino-3-phenyl-1H-1,2,4-triazol-1-yl-N,N,N',N'-tetramethylphosphonic diamide: Triamiphos	
226. 1-(4-Amino-1,2-dihydro-2-oxypyrimidin-1-yl)-4[(S)-3-amino-5-(1-methylguanidino)valeramido]-1,2,3,4-tetradecoxy-B-D-erythro-hex-2-enopyranuronic acid: Blasticidin-S	

Appendix 2-1 (continued)

CHEMICAL NAME and anything that has the chemical as an ingredient	Chemical is not regarded as hazardous if it falls under this PERCENTAGE AMOUNT (if given)
227. 4-Amino-6-tert-butyl-4,5-dihydro-3-methylthio-1,2,4-triazin-5-one: Metribuzin(e), Lexone, Sencor	
228. 2-Amino-3-chloro-1,4-naphthoquinone: ACN, Motgeton, ACNQ	
229. L-2-Amino-4-[(hydroxymethyl)phosphinoyl]-butyryl-L-ala-nyl-L- alanine: Phosphinothricylalanylalanine	19
230. α-Amino-3-hydroxy-5-isoxazoleacetic acid: Ibotenic acid	
231. 3-(α-Acetylbenzyl)-4-hydroxycoumarin: Warfarin, Rodex, Coumarins	
232. Dodecylguanidine acetate: Dodine, Carpine, Cyprex	
233. Ethyl acetate	
234. Chromium acetate	
235. Thallium acetate	
236. B-Fluoroethyl acetate	
237. Acetylene dicarboxamide: Cellocidin, Lenamycin, 2-Butynediamide	
238. Nitrous acid	
239. Acrylonitrile: 2-Propenenitrile, Vinyl cyanide	
240. Acrylamide: Porpenamide	
241. Antimony compound	
242. 1-Allyl-1-(3,7-dimethyl-octyl)piperodinium: Piproctanyl, Alden, Stemtrol	
243. Alkanolammonium 2,4-dinitro-6-(1-methylpropyl)phenolate	
244. N-Alkylaniline	
245. N-Alkyltoluidine	
246. Ammonia	10
247. S-(N-Ethylcarbamoyl-N-methylcarbamoylmethyl) O,O-diethyl phosphorodithioate: Mecarban, Afos, Murfor	
248. S-a-(Ethylcarbamoyl)benzyl O,O-dimethyl phosphorodithioate: PAP, Phenthoate, Cidial	3
249. O-Ethyl O-4-nitrophenyl phenylphosphonothioate: EPN	
250. Ethyl 2-diethoxythiophosphoryloxy-5-methylpyrazolo [1,5a] Pyrpyrimidine-6-carboxylate: Pyrazophos Afugan, Missile	
251. O-Ethyl S,S-diphenyl phosphorodithioate: ED-P, Ectenphos, Hinosan	2
252. O-Ethyl S,S-dipropyl phosphorodithioate: Ethoprophos, Mocap, Prophos	
253. Ethylene chlorohydrin: 2-chloroethanol	
254. Ethyl 4-(methylthio)-m-tolyl isopropylphosphoramidate: Fenamiphos, Nemacur	
255. O-Ethyl 4-(methylthio)phenyl s-propyl dithiophosphate: Sulprofos, Bolstar, Helothion	3
256. Ethyl O-benzoyl 3-chloro-2,6-dimethoxybenzohydroximate: Benzoximate, Citrazon, Aazomate	
257. S-2-Ethylsulfonyl ethyl O,O-dimethyl phosphorothioate: Demeton-S- methyl sulfone, Metaisossystoxsulfon	

Appendix 2-1 (continued)

CHEMICAL NAME and anything that has the chemical as an ingredient	Chemical is not regarded as hazardous if it falls under this PERCENTAGE AMOUNT (if given)
258. S-2-Ethylsulfanyl-1-methylethyl O,O-dimethyl phosphorothioate: ESP, Estox, oxydeprofos, Metasystox S	
259. S-2-Ethylsulfanyl-1-methylethyl O,O-dimethyl phosphorothioate: Oxydemeton-methyl, Metasystox R	
260. O-Ethyl O-2-isopropoxycarbonylphenyl isopropylphosphoramidothioate: Isufenphos, Oftanol, Amaze	
261. 2-[5-Ethyltetrahydro-5-[tetrahydro-3-methyl-5-[tetrahydro-6-hydroxy-6-(hydroxymethyl)-3,5-dimethyl-2H-pyran-2-yl]-2-furyl]-2-furyl]-9-hydroxy-B-methoxy-B-methoxy-a,G,2,8-tetramethyl-1,6-dioxaspiro[4,5]decane-7-butyric acid: Monensin	8
262. O-Ethyl O-2,4,5-trichlorophenyl ethylphosphonothioate: Trichloronate, Agrisil, Phytosol	
263. S-2-Ethylthioethyl O,O-dimethyl phosphorodithioate: Thiometon, Ekatin	
264. 2-Ethylthioethyl O,O-dimethyl phosphorothioate: Methyl demeton, Metasystox	
265. A-Ethylthio-o-tolyl methylcarbamate: Ethiofencarb, Croneton	
266. 4-Ethylthiophenyl methylcarbamate: Toxamate, EMPC	
267. O-Ethyl S-Phenyl-(R,S)-ethylphosphonodithioate: Fonofos, Dyfonate	
268. S-Ethyl N,N-hexamethylenethiocarbamate: Molinate, Ordram	
269. Hydrochloric acid	10
270. Hydrogen chlorate (excluding Explosives)	
271. Chlorinated 2,2-dimethyl-3-methylenebicyclo[2.2.1] heptane: Camphechlor, Chlorinated camphene, Toxaphene	
272. Methyl chloride (Pesticides in the container {300ml or smaller} with 50% or amaller amount of Methyl chloride are excluded)	50
273. N-Alkyldimethylbenzyl ammonium chloride	
274. Ethyl chloride	
275. Oxalic acid	10
276. 1,1'-Oxybis[2-chloroethane]: sym-Dichloroethyl ether, DCEE, Chlorex	
277. 7-Oxybicyclo[2.2.1]heptane-2,3-dicarboxylic acid: Endothal (1)	
278. Octamethylpyrophosphoramide: Schradan, OMPA, Sytam	
279. 1,3,4,5,6,7,8,8-Octachloro-1,3,3a,4,7,7a-hexahydricthanoisobenzo- furan: Isobenzan, Telorin, Omtan	
280. 1,2,4,5,6,7,8,8-Octachloro-2,3,3a,4,7,7a-hexahydro-4,7-1H-indene: Chlordan(e), Toxichlor, Niran	
281. Iodine	
282. Methyl iodine	
283. Hydrogen iodide	
284. 1,1'-Iminodi(octamethylene)diguandine: Guazatine, Panoctine	3.5
285. 1,1-Ethylene-2,2-dipyridylum dibromide: Diquat dibromide, Reglox, Reglone	

Appendix 2-1 (continued)

CHEMICAL NAME and anything that has the chemical as an ingredient	Chemical is not regarded as hazardous if it falls under this PERCENTAGE AMOUNT (if given)
286. Methyl isothiocyanate: Trapex, MITC	
287. (E)-O-2-Isopropoxycarbonyl-1-methylvinyl thylethylphosphoramidothioate: Propetamphos, Safrothin	
288. 2-Isopropyl-4-methylpyrimidinyl-6-diethyl thiophosphate: Diazion, Dimpylate	
289. 2-Isopropoxybenzoic acid methylamide	1
290. 2-Isopropoxyphenyl N-methylcarbamate: Baygon, Propoxur, Uden(e)	1
291. S-2-Isopropylphenyl O,O-dimethyl phosphorodithioate: Isothioate, Hosdon	
292. 2-Isopropylphenyl methylcarbamate: Isoprocab, MICP, Etofolan	1.5
293. Tetramethylthiuram disulfide: Thiram(e), TMTD, Thiuram	
294. Carbon disulfide	
295. 4-Indol-3-yl-butyric acid: IBA, Seradix, Rootone F	
296. Hydrogen phosphide: Phosphine	
297. Zinc phosphide	
298. Aluminium phosphide: Celphos, Anostoxin (or any substances having Aluminium phosphide solving accelerator)	
299. Bichromate	
300. Nitric acid	10
301. Thallium nitrate	
302. Cadmium compound	
303. 5-[(3-Carboxy-4-hydroxyphenyl)(3-carboxy-4-oxo-2,5-cyclohexadion-1- ylidone)methyl]-2-hydroxybenzoic acid triammonium salt: Aluminon, Lysofon	
304. Potassium	
305. Potassium, Sodium, Alloy of potassium and sodium	
306. Curare: Urari	
307. Curarine	
308. Cresol: Methyl phenol, oxytoluene	
309. Chromic acid	
310. Xylene: Dimethylbenzene, xylol	
311. 1-Chloro-2-nitropropane: Lanstan	
312. 2-Chloro-4,5-dimethyphenyl-N-methylcarbamate: Carbanolate, Banol	
313. 1-Chloro-1,2-dibromoethane: CDBE	
314. 2-Chloro-2-diethylcarbamoyl-1-methylvinyl dimethyl phosphate: Phosphamidon, Dimecron	
315. 2-Chloro-1-(2,4-dichlorophenyl)vinyl dimethyl phosphate: Dimethylvinphos	
316. 2-Chloro-1-(2,4-dichlorophenyl)vinyl dimethyl phosphate: Themivinphos	
317. S-6-Chloro-2,3-dihydro-2-oxobenzoxazol-3-ylmethyl O,O-diethyl phosphorodithioate: phosalone, zolone	2.2

Appendix 2-1 (continued)

CHEMICAL NAME and anything that has the chemical as an ingredient	Chemical is not regarded as hazardous if it falls under this PERCENTAGE AMOUNT (if given)
318. 2-(2-Chloro-1-methoxyethoxy)phenyl methylcarbamate: Cloethocarb. Lance	
319. 2-Chloro-4-methyl-6-dimethylaminopyrimidine	
320. S-Chloromethyl O,O-diethyl phosphorodithioate: Chlormephos, Dotan	
321. Chloromethyloxirane: Epichlorohydrin	
322. O-2-Chloro-4-methylthiophenyl O-Methyl ethylphosphoramidothioate: Mitemate, Amidothioate	
323. 7-Chlorobicyclo [3.2.0]hepta-2,6-dien-6-yl dimethylphosphate: Heptenophos, Ragadan, Hostaquick	
324. Chlorosulfonic acid	
325. Chloroacetic acid: MCA	
326. 2-Chloroethyltrimethylammonium: Chlormequat, Cycocel	
327. O-(5-Chloro-1-isopropyl-1H-1,2,4-triazol-3-yl) O,O-diethyl phosphorothioate: Isazofos, Miral	
328. N-(3-Chloro-4-Chlorodifluoromethylthiophenyl)-N,N-dimethyl-urea: Thiochloromethyl	12
329. 2-Chloro-N-(2-chloroethyl)-N-methylethanamine: Mechlorethamine	
330. 3-(2-Chloro-3,3,3-trifluoro-1-propenyl)-2,2-dimethylcyclopropane- carboxylic acid cyano-(3-phenoxyphenyl)methyl ester: Cyhalothrin, Grenade	
331. p-Chloophenyldiazothiurea	
332. (+)-a-[N-(3-Chlorophenyl)cyclopropanecarboxamido]-G-butyrolactone: Cyprofuram, vinicur	
333. 3-[1-(4-Chlorophenyl)-3-oxobutyl]-4-hydroxy-2H-1-benzopyran-2-one: Coumachlor, Tomorin, Ratilan	
334. S-4-Chlorophenylthiomethyl O,O-dimethyl phosphorodithioate: Methyl trithion, Tri-Me	
335. S-4-Chlorophenylthiomethyl O,O-dimethyl dithiophosphate: Carbophenothion, Trithion	
336. 2-[(4-Chlorophenyl)phenylacety]-1H-indene-1,3(2H)-dione: Chlorophacinone, Caid, Laphaidione	0.025
337. 4-(2-Chlorophenylhydrazono)-3-methyl-5-isoxazolone: Drazoxolon, Ganocide	
338. Chloroform	
339. 3-Chloro-1,2-propanediol: Chlorohydrin	
340. S-2-Chloro-1-phthalimidoethyl O,O-diethyl dithiophosphate: Dialifos, Dialifor, Torak	
341. Dimethyl terephthalate	
342. 3,7,9,13-Tetramethyl-5,11-dioxa-2,8,14-thithia-4,7,9,12- tetraazapentadeca-3,12-dien-6,10-dione: Thiocarb, Larvin, Semevin	
343. G-2,c-4,c-6,c-8-Tetramethyl-1,3,5,7-tetraoxocane: Metaldehyde	
344. Tetraalkyl lead	

Appendix 2-1 (continued)

CHEMICAL NAME and anything that has the chemical as an ingredient	Chemical is not regarded as hazardous if it falls under this PERCENTAGE AMOUNT (if given)
345. O,O,O',O'-Tetraethyl dithiopyrophosphate: Sulfotep, Bladafum	
346. O,O,O',O'-Tetraethyl S,S'-methylene bis(phosphorodithioate: Ethion, Dithon	
347. Tetraethyl pyrophosphate: TEPP, Tetron, Vapotone	
348. Tetrachloronitroethane	
349. N-(1,1,2,2-Tetrachloroethylthio)cyclohex-4-ene-1,2-dicarboximid: Captafol, Difolatan	
350. Tetrachloroisophthalonitrile: Chlorothalonil, TPN, Bravo	
351. 1,2,3,6-Tetrahydro-N-(tichloromethylthio)phthalimide: Captan, Captab, Orthocide	
352. (S)-2,3,5,6-Tetrahydro-6-phenylimidazo[2,1-b]thiazole: Levamisole, Ketrax	3.4
353. Toluene	
354. Toluenediamine	
355. Toluidine	
356. m-Toly methylcarbamate: Metolcarb, Tsumacide, MTMC	2
357. 2,4,6-Trinitrophenol: Picric acid (excluding Explosives)	
358. Tributyl(2,4-dichlorobenzyl)phosphonium ion: Chlorphonium, Phosfon, Phosfleur	
359. S,S,S-Tributylphosphorotrithioate	
360. Tri(cyclohexyl)-1H-1,2,4-triazol-1-yl tin: Azocyclotin, Peropal	
361. Trichloronitromethane: Chloropicrin	
362. Trichloronitroethylene	
363. N-(N-Trichloromethylthio)phthalimide: Folpet, Phaltan	
364. 1,1,1-Trichloro-2,2-bis(p-chlorophenyl)ethane: DDT	
365. 2,2,2-Trichloro-1,1-bis(4-chlorophenyl)ethanol: Dicofol, Kelthane	
366. Trichloroacetic acid	
367. 1,2-O-(2,2,2-Trichloroethylidene)-a-D-glucofuranose: Chloralose, Glucochloralose, Glucochloral	
368. (2,4,5-Trichlorophenoxy)acetic acid: 2,4,5-T, Weedone	
369. Trithiocycloheptadiene-3,4,6,7-tetranitrile: TCH	15
370. a,a,a-Trifluoro-2,6-dintro-N,N-dipropyl-p-toluidine: Trifluralin, Treflan, Elancolan	
371. Trifluoromethanesulfonic acid	10
372. 1,1'-Thiobis(2-chloroethane): Mustard gas	
373. Thiosemicarbazide	
374. Ethyl thiocynoacetate: REE, Sassen	1
375. Phenol	5
376. Phenyl N,N'-dimethylphosphorodiamidate: Diamidafos	
377. Phenylenediamine	
378. Phenylhydrazine: Hydrazinobenzene	
379. Pentachlorophenol	1
380. Formalin	1

Appendix 2-1 (continued)

CHEMICAL NAME and anything that has the chemical as an ingredient	Chemical is not regarded as hazardous if it falls under this PERCENTAGE AMOUNT (if given)
381. S-(N-Formyl-N-methylcarbamoylmethyl) O,O-dimethyl	
phosphorodithioate: Formothion, Anthio, Aflix	
382. Phosphorothioic acid O,O-diethyl O-(7,8,9,10-tetrahydro-6-oxo-6H-	
dibenzo[b,d]pyran-3-yl) ester: Coumithoate, Dithion, Dition	
383. 1,1',1''-Phosphinylidynetris(2-methylaziridine): Metepa, Methyl	
aphoxide, MAPO	
384. 1,1',1''-Phosphinylidyne trisaziridine: Triethylene phosphoramide,	
Aphoxide, APO	
385. Poly[oxyethylene(dimethylimino)ethylene(dimethylimino)ethylene	
dichloride]: WSCP	
386. 3-[1-(2-Furanyl)-3-oxobutyl]-4-hydroxycoumarin: Coumafuryl,	
Fumarin	
387. 2-Furancarboxaldehyde: Furfural	
388. 2-Propenal: Acrolein	
389. Fluorosilicic acid	
390. Fluoroboric acid	
391. Fluoroaceto-p-bromoaniline: FABA	
392. Fluoroacetic acid	
393. Fluoroacetic acid amide: Fussol, Fluoroacetamide	
394. Sodium fluoride	
395. Sodium aluminium fluoride: Cryolite, Kryolith	
396. Tetramethyl phosphorodiamidic fluoride: Dimefox	
397. Hydrogen fluoride	
398. Ammonium hydrogen fluoride: Ammonium bifluoride	
399. Sulfuryl fluoride	
400. (S)-3-(2-Piperidinyl)pyridine: Anabasin, Neonicotine	
401. Sea onion: Squill, Bulbusscillae, Meerzwiebel	
402. Hexachlorocyclohexane: BHC, HCH	1.5
403. 1,2,3,4,10,10-Hexachloro-6,7-epoxy-1,4a,5,6,7,8,8a-octahydro-exo-	
1,4-exo-5,8-dimethanonaphthalene: Endrin, Nendrin	
404. 1,2,3,4,10,10-Hexachloro-6,7-epoxy-1,4a,5,6,7,8,8a-octahydro-endo,	
exo-1,4:5,8-dimethanonaphthalene: HEOD, Dieldrin, Octalox	
405. (1R,4S,4aS,5S,8R,8aR)-1,2,3,4,10,10-Hexachloro-1,4,4a,5,8,8a-	
hexahydro-1,4:5,8-dimethanonaphthalene: HHDN, Aldrin,	
Octalene	
406. 2,2,4,4,6,6-Hexakis(1-aziridinyl)-2,2,4,4,6,6-hexahydro-1,3,5,2,4,	
6-triazatriphosphorine: Apholate	
407. 1,4,5,6,7,8,8-Heptachloro-3a,4,7,7a-tetrahydro-4,7-methanoindene:	
Drinox, Heptachlor(e), Heptamul	6
408. Sulfur	
409. Sulfuric acid	10
410. Dimethyl sulfate	
411. Thallium sulfate	

Appendix 2-1 (continued)

CHEMICAL NAME and anything that has the chemical as an ingredient	Chemical is not regarded as hazardous if it falls under this PERCENTAGE AMOUNT (if given)
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- 412. Yellow phosphorus: White phosphorus
- 413. 2-Methoxy-4H-1,3,2-benzodioxaphosphorin 2-sulfide: Dioxabenzofos,
Salithion
- 414. Phosphorus sulfide
- 415. Hydrazine hydrate
- 416. 4-Hydroxy-3,5-di-iodobenzonitrile: Ioxynil, Actril
- 417. 2-Hydroxyethylhydrazine: Omaflora, Brombloom, 2-Hydrazinoethanol
- 418. 4-Hydroxy-3-(1,2,3,4-tetrahydro-1-naphthyl)coumarin: Coumatetrayl,
Racumin
- 419. 4-Hydroxy-3-[1,2,3,4-tetrahydro-3[4-(4-trifluoromethylbenzyloxy)
phenyl]-1-naphthyl]coumarin: Flocoumafen, Storm, Stratagem
- 420. 3-Hydroxy-2-pentenedioic acid dimethyl ester dimethyl phosphate:
Bomyl, Swat
- 421. 1-Hydroxy-2(1H)-pyridinethione: Omadine, Pyrithione, PTO
- 422. 5-(a-Hydroxy-a-2-pyridylbenzyl)-7-(a-2-pyridylbenzylidene)-5-
norbornene-2,3-dicarboximide: Norbormide, Raticate, Shoxin
- 423. Hydroxylamine
- 424. Other poisonous substances designated by the Minister of
Environment Administration.

3

Appendix 2-2

List of Special Poisonous Substances

CHEMICAL NAME and anything that has the chemical as an ingredient	Chemical is not regarded as hazardous if it falls under this PERCENTAGE AMOUNT (if given)
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- | | |
|--|------------------------------|
| <ol style="list-style-type: none"> 1. A-Naphthyl thiourea: ANTU, Bantu, Dirax 2. 1-(4-Nitrophenyl)-3-(3-pyridylmethyl)urea: Priminl, Vacor 3. O,O-Dimethyl O-p-nitrophenyl thiophosphate: Methyl parathion, Metaphos, Metacide 4. Dimethyl-2,2-dichlorovinylphosphate: Dichlorvos, DDVP 5. 1,1-Dimethyl-4,4-dipyridinium: Paraquat, Gramoxone 6. 2,2-Dimethyl-2,3-dihydro-7-benzofuranyl-N-methylcarbamate: Carbofuran, Furadan, Curaterr 7. O,O-Dimethyl S-methyl carbamoylethyl dithiophosphate: Dimethoate, Cygon 8. N,N-Dimethyl-1-methylcarbamoyloxyimino-2-(methylthio)acetamide: Oxamyl, Vydate 9. 1-(2,2-Dimethyl-1-methylthiomethylpropylideneamino-oxy)-N-methylformamide: Thiofanox, Thiofanocarb, Dacamox 10. 2-Dimethyl-amino-5,6-dimethyl-4-pyrimidinyl dimethylcarbamate: Pirimor, Pirimicarb 11. S-[[1,1-(Dimethylethyl)thio]methyl] O,O-diethyl phosphorodithioate: Terbufos, Counter 12. 3-[2-(3,5-Dimethyl-2-oxocyclohexyl)-2-hydroxyethyl]glutarimide: Cycloheximide, Actidione 13. O,O-Dimethyl S-[(4-oxy-1,2,3-benzotriazole-3(4H)-yl)methyl] dithiophosphate: Azinphosmethyl, Guthion 14. 1,2-Dibromoethane 15. 1,2-Dibromo-3-chloropropane: DBCP 16. O,O-Diethyl O-p-nitrophenyl thiophosphate: Parathion 17. Diethyl 1,3-dithietan-2-ylidenephosphoramidate: Fosthietan, Acconem, Geofos 18. Diethyl 1,3-dithiolan-2-ylidenephosphoramidate L Phosfolan, Cyolane, Cylan 19. Diethyl(4-methyl-1,3-dithiolan-2-ylidene)phosphoramidate: Mephosfolan, Cytrolane 20. O,O-Diethyl O-4-(methylsulfinyl phenyl) thiophosphate: Fensulfotion, Terracur-P, Dasanit 21. Dithyl 5-methyl-3-pyrazolyl phosphate: Pyrazoxon | <p>0.2</p> <p>5</p> <p>3</p> |
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Appendix 2-2 (continued)

CHEMICAL NAME and anything that has the chemical as an ingredient	Chemical is not regarded as hazardous if it falls under this PERCENTAGE AMOUNT (if given)
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22. S-[2-(Diethylamino)ethyl] O,O-diethyl phosphorothioate:
Amiton, Tetram
23. O,O-Diethyl S-[2-(ethylthio)ethyl]phosphorodithioate: Disulfoton,
Thiodemeton
24. O,O-Diethyl O-[2-(ethylthio)ethyl]phosphorothioate mixture with
O,O-diethyl S-[2-(ethylthio)ethyl]phosphorothioate: Demeton,
Systox, Mercaptophos
25. O,O-Diethyl S-isopropylcarbamoylmethyl phosphorodithioate:
Prothoate, Fac
26. O,O-Diethyl O-quinoxalin-2-yl phosphorothioate: Quinalphos,
Bayrusil, Ekalux
27. O,O-Diethyl O-pyrazin-2-yl phosphorothioate: Thionazin, Nemafos,
Cymnem
28. Diisopropyl fluorophosphate: Isofluorphate, DFP
29. O-2,5-Dichloro-4-(methylthio)phenyl O,O-diethyl phosphorothioate:
Chlorthiophos, Celathion
30. 3,4-Dichlorobenzenediazothiurea: Chloropromurite, Muritan,
Promurit
31. (2,4-Dichlorophenoxy)acetic acid: 2,4-D, Hedonal, Trinoxol
32. 1,3-Dichloropropene
33. 2,3-Dihydro-2,2-dimethylbenzofuran-7-yl(dibutylaminothio)
methylcarbamate: Carbosulfan, Marshal
34. 1L-(1,3,4/2,6)-2,3-Dihydroxymethyl-4-[(1S,4R,5S,6S)-4,5,6-trihy
droxy -3-hydroxymethylcyclohex-2-enylamino]cyclohexyl-B-D-
glucopyranoside: Validamycin (A), Validacin, Valimon
35. N-Methyl-2,4-dinitro-N-(2,4,6-tribromophenyl)-6-(trifluoromethyl)
benzenamine: Bromethalin(e)
36. O-Methyl O-(4-bromo-2,5-dichlorophenyl)phenyl thiophosphate:
Phosvel, Abar, Leptophos
37. 2-Methyl-2-(methylthio)propionaldehyde O-methylcarbamoyloxime:
Aldicarb, Temik
38. N'-(2-Methyl-4-chlorophenyl)-N,N-dimethylformamidine:
Chlordimeform, Galecron, Fundal
39. 1-Benzothiazol-2-yl-1,3-dimethylurea: Methabenzthiazuron,
Tribunil
40. 3-[3-(4'-Bromo[1,1-biphenyl]-4-yl)-1,2,3,4-tetrahydro-1-naphth-
aleny]-4-hydroxy-2H-1-benzopyran-2-one: Brodifacoum,
Talon
41. 3-[3-(4'-Bromobiphenyl-4-yl)-3-hydroxy-1-phenylpropyl]-4-
hydroxycoumarin: Bromadiolone, Maki
42. Methyl bromide
43. Lead arsenate

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Appendix 2-2 (continued)

CHEMICAL NAME and anything that has the chemical as an ingredient	Chemical is not regarded as hazardous if it falls under this PERCENTAGE AMOUNT (if given)
44. O,O-Bis(4-Chlorophenyl) N-acetimidoethylphosphoramidothioate:	
Phosacetim, Gophacide	
45. 3-(3-Biphenyl-4-yl-1,2,3,4-tetrahydro-1-naphthyl)-4-hydroxy-	
coumarin: Difenacoum, Ratak	
46. Carbon tetrachloride	
47. Tributyl tin oxide	
48. 6,7,8,9,10,10-Hexachloro-1,5,5a,6,9,9a-hexahydro-6,9-methano-2,4,3-	
benzodioxathiepin 3-oxide: Endosulfan, Thiodan, Chlorthiepin	
49. Arsenic trioxide: Arsenious acid, Arsenous oxide	
50. Strychnidin-10-one: Strychnine	
51. 2-Amino-3-chloro-1,4-naphthoquinone: ACN, Mogeton, ACNQ	
52. Thallium acetate	
53. Phenylmercury acetate: PMA, PMAC	
54. O-Ethyl S,S-dipropyl phosphorodithioate: Ethoprophos, Mocap,	
Prophos	
55. S-2-Ethylthioethyl O,O-dimethyl phosphorodithioate: Thiometon,	
Ekatin	
56. 2-Ethylthioethyl O,O-dimethyl phosphorothioate: Methyl demeton,	
Metasystox	
57. Chlorinated 2,2-dimethyl-3-methylenebicyclo[2.2.1]heptane:	
Camphechlor, Chlorinated camphene, Toxaphene	
58. Arsenic pentoxide: Arsenic acid anhydride	
59. 1,1'-Oxybis[2-chloroethane]: sys-Dichloroethyl ether, DCEE, Chlorex	
60. Octamethylphosphoramide: Schradan, OMPA, Sytam	
61. 1,3,4,5,6,7,8,8-Octachloro-1,3,3a,7,7a-hexahydro-4,7-	
methanoisobenzofuran: Isobenzan, Telorin, Omtan	
62. 1,2,4,5,6,7,8,8-Octachloro-1,2,3,3a,4,7,7a-hexahydro-4,7-methano-	
1H-indene: Chlordan(e), Toxichlor, Niran	
63. Aluminium phosphide: Celphos, Phostoxin	
64. Thallium nitrate	
65. [5-(3-Carboxy-4-hydroxyphenyl)(3-carboxy-4-oxo-2,5-cyclohexa-	
dien-1-ylidene)methyl]-2-hydroxybenzoic acid triammonium	
salt: Aluminon, Lysofon	
66. 2-Chloro-2-diethylcarbamoyl-1-methylvinyl dimethyl phosphate:	
Phosphamidon, Dimecron	
67. 2-Chloro-4-methyl-6-dimethylaminopyrimidine	
68. S-Chloromethyl O,O-diethyl phosphorodithioate: Chlormephos, Dotan	
69. 7-Chlorobicyclo[3.2.0]hepta-2,6-dien-6-yl dimethylphosphate:	
Heptenophos, Ragadan, Hostaquick	
70. 2-Chloro-N-(2-chloroethyl)-N-methylethanamine: Mechlorethamine	
71. p-Chlorophenyldiazothiurea	
72. S-2-Chloro-1-phthalimidoethyl O,O-diethyl dithiophosphate:	
Dialifos, Dialifor, Torak	

Appendix 2-2 (continued)

CHEMICAL NAME and anything that has the chemical as an ingredient	Chemical is not regarded as hazardous if it falls under this PERCENTAGE AMOUNT (if given)
73. Tetraalkyllead	
74. O,O,O',O'-Tetraethyl dithiopyrophosphate: Sulfotep, Bladafum	
75. Tetraethyl pyrophosphate: TEPP, Tetron, Vapotone	
76. 1,2,3,6-Tetrahydro-N-(trichloromethylthio)phthalimide: Captan, Captab, Orthocide	
77. Trichloronitromethane: Chloropicrin	
78. 1,1,1-Trichloro-2,2-bis(p-chlorophenyl)ethane: DDT	
79. A,A,A-Trifluoro-2,6-dinitro-N,N-dipropyl-p-toluidine: Trifluralin, Treflan, Elancolan	
80. Thiosemicarbazide	
81. Pentachlorophenol	
82. Phenylmercuric triethanol ammonium borate: PTA-B	
83. Fluoroacetic acid	
84. Fluoroacetic acid amide: Fussol, Fluoroacetamide	
85. Tetramethyl phosphorodiamidic fluoride: Dimefox	
86. Hexachlorocyclohexane: BHE, HCH	
87. 1,2,3,4,10,10-Hexachloro-6,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro- exo-1,4-exo-5,8-dimethanonaphthalene: Endrin, Nendrin	
88. 1,2,3,4,10,10-Hexachloro-6,7-epoxy-1,4a,5,6,7,8,8a-hexahydro-1,4- 5,8-dimethanonaphthalene: HEOD, Dieldrin, Octalox	
89. (1R,4S,4aS,5S,8R,8aR)-1,2,3,4,10,10-Hexachloro-1,4,4a,5,8,8a- hexahydro-1,4: 5,8-dimethanonaphthalene: HHDN, aldrin, Octalene	
90. 1,4,5,6,7,8,8-Heptachloro-3a,4,7,7a-tetrahydro-4,7-methanoindene: Drinox, Heptachlor(e), Heptamul	
91. Thallium sulfate	
92. 4-Hydroxy-3[1,2,3,4-tetrahydro-3-[4-(4-trifluoromethylbenzyloxy) phenyl]-1-naphthyl]coumarin: Flocoumafen, Storm, Stratagen	
93. 5-(A-Hydroxy-A-2-pyridylbenzyl)-7-(A-2-pyridylbenzylidene)-5- norbornene-2,3-dicarboximido: Norbormido, Raticate, Shoxin	
94. Other substances designated by the Minister of Environment Administration.	

INSTALLATION:	COMPLIANCE CATEGORY: Hazardous Materials Management Republic of Korea	DATE:	REVIEWER(S):
STATUS NA C RMA	REVIEWER COMMENTS:		

(1) Directorate of Engineering and Housing (DEH) (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (8) Transportation/Maintenance Officer (DOL) (9) Chief of Operations and Maintenance (O&M) (11) Aviation Commander (DPTMSEC) (13) Engineering, Plans, and Services (EP&S) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) Transfer, Storage, and Disposal Facility (TSDF) Operators (DEH, DOL, DRMO) (19) Shop Activity Supervisor (22) Staff Judge Advocate (23) Defense and Reutilization Marketing Office (DRMO) (30) Army/Air Force Exchange Service (AAFES) (33) Golf Course Pesticide Shop

SECTION 3

HAZARDOUS WASTE MANAGEMENT

Section 3

HAZARDOUS WASTE MANAGEMENT

A. Applicability

This protocol is applicable to all U.S. Armed Forces installations located in the Republic of Korea. It is specifically applicable to those installations that store, collect and transport, treat, and/or dispose of hazardous wastes.

B. National Laws and Regulations

The law and its implementing regulations are designed to preserve the natural and human environment through the appropriate disposal of waste. They apply to the disposal of domestic waste and special waste, contain provisions for the training of personnel in charge of waste disposal, and provide requirements for the construction, operation, and maintenance of waste disposal plants.

- *Waste Management Law* (Law No. 4363, wholly amended 8 March 1991)
- *Presidential Decree for the Implementation of the Waste Management Law* (Presidential Decree No. 13480, wholly amended 26 September 1991)
- *Decree of the Prime Minister to Implement the Waste Management Law* (Decree of the Prime Minister No. 397, wholly amended 13 December 1991)

C. Provincial Laws and Regulations

Because of Korea's strongly centralized system of government, hazardous waste regulations are established at the national level. Provincial governments only enact certain procedural ordinances that are not covered in the national regulations. The following duty is one that must or may be performed by governors or mayors:

Disposal of Special Waste - the mayor of the special city of Seoul, the mayors of the "direct control" cities, and governors of the provinces are required to dispose of industrial waste properly. This includes collecting information on the amount of industrial waste production and disposal for their respective jurisdictions and securing land disposal sites for this waste.

D. Key Compliance Definitions

- *Special Wastes* - this term refers to specific types of wastes. The wastes considered special wastes are defined in Appendix 3-1.
- *Special Waste Disposal Facility* - a facility where special wastes are landfilled, incinerated, destroyed, neutralized, or cement solidified. In particular, this refers to any one or a combination of the following intermediate facilities:
 - incinerating facility
 - high temperature destruction facility
 - crushing/cutting facility
 - melting facility
 - evaporating/condensing facility
 - refining facility (a facility that disposes of wastes by screening, extracting, separating, distilling techniques, etc.)
 - reaction facility (a facility that disposes of waste by such chemical reactions as neutralization, oxidation, etc.)
 - oil/water separation facility
 - settling facility
 - dehydrating facility
 - drying facility
 - solidifying facility
 - stabilizing facility (including a farmyard manure producing facility)

and the following final disposal facilities:

- blocking type landfill
- managing type landfill
- settling type landfill
- stabilizing type landfill.

HAZARDOUS WASTE MANAGEMENT PROTOCOL GUIDANCE FOR WORKSHEET USERS

	REFER TO WORKSHEET ITEMS:	CONTACT THESE PERSONS OR GROUPS: (*)
All Installations	3-1 and 3-2	(1)(2)(23)
Permits	3-3	(1)(2)(23)
Collection and Transportation	3-4 through 3-6	(1)(2)(4)(6)(8)(9)(13) (16)(17)(18)(19)(23)(30)(33)
Disposal	3-7 through 3-11	(1)(2)(23)
Reporting Requirements	3-12	(1)(2)(23)
Operating Standards	3-13 through 3-15	(1)(2)(9)(18)(23)

(*)CONTACT/LOCATION CODE:

- (1) Directorate of Engineering and Housing (DEH)
- (2) Environmental Coordinator (EC)
- (4) Safety and Health Officer
- (6) Director of Logistics (DOL)
- (8) Transportation/Maintenance Officer (DOL)
- (9) Chief of Operations and Maintenance (O&M)
- (13) Engineering, Plans, and Services (EP&S)
- (16) Building and Grounds Division (DEH)
- (17) Entomology Shop (DEH)
- (18) Transfer, Storage, and Disposal Facility (TSDF) Operators (DEH, DOL, DRMO)
- (19) Shop Activity Supervisor
- (23) Defense and Reutilization Marketing Office (DRMO)
- (30) Army/Air Force Exchange Service (AAFES)
- (33) Golf Course Pesticide Shop

**COMPLIANCE CATEGORY:
HAZARDOUS WASTE MANAGEMENT
Republic of Korea**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>ALL INSTALLATIONS</p> <p>3-1. Determine actions or changes since previous review of hazardous waste management (GMP).</p> <p align="center">...</p> <p>3-2. Copies of all relevant laws and regulations on hazardous waste management should be maintained at the installation (GMP).</p> <p align="center">...</p> <p>PERMITS</p> <p>3-3. Installations are required to have a special waste disposal permit (Decree of the Prime Minister to Implement the Waste Management Law, Article 33).</p> <p align="center">...</p>	<p>Obtain a copy of previous report and determine if noncompliance issues have been resolved. (1)(2)</p> <p align="center">...</p> <p>Determine if copies of the following laws and regulations are maintained and kept current at the installation: (1)(2)(23)</p> <ul style="list-style-type: none"> - <i>Environmental Policy Fundamental Law.</i> - <i>Presidential Decree to Implement the Environmental Policy Fundamental Law.</i> - <i>Public Health Act.</i> - <i>Waste Management Law.</i> - <i>Presidential Decree for the Implementation of the Waste Management Law.</i> - <i>Ministry of Health and Social Affairs (MOHSA) Order for the Implementation of the Waste Management Law.</i> <p align="center">...</p> <p>Determine if the installation disposes of special waste. (1)(2)(23)</p> <p>Verify that a special waste permit has been obtained. (1)(2)(23)</p> <p align="center">...</p>

(1) Directorate of Engineering and Housing (DEH) (2) Environmental Coordinator (EC) (4) Safety and Health Officer (6) Director of Logistics (DOL) (8) Transportation/Maintenance Officer (DOL) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) Transfer, Storage, and Disposal Facility (TSDF) Operators (DEH, DOL, DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (30) Army/Air Force Exchange Service (AAPES) (33) Golf Course Pesticide Shop

**COMPLIANCE CATEGORY:
HAZARDOUS WASTE MANAGEMENT
Republic of Korea**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>COLLECTION AND TRANSPORTATION</p> <p>3-4. Installations that collect and transport special waste are required to do so in a specific manner (Decree of the Prime Minister to Implement the Waste Management Law, Article 30).</p> <p>...</p> <p>3-5. Installations that store special wastes prior to collection and/or transportation are required to do so in a specific manner (Decree of the Prime Minister to Implement the Waste Management Law, Article 30).</p> <p>...</p> <p>3-6. Special wastes storage time requirements must be met (Decree of the Prime Minister to Implement the Waste Management Law, Article 30).</p> <p>...</p>	<p>Verify that vehicles and equipment used for the collection and transportation of special waste prevent waste scattering and odor emission. (1)(2)(4)(6)(8)(9)(13)(16)(17)(18)(19)(23)(30)(33)</p> <p>Verify that particulate matters, waste asbestos, and waste agrochemicals are contained in polyethylene bags to prevent scattering. (1)(2)(4)</p> <p>Verify that liquid special wastes are separated by type and kept in sealed containers. (1)(2)(4)</p> <p>Verify that vehicles (except those used temporarily) used for the collection and transportation of special wastes are painted yellow. (1)(2)(4)</p> <p>Verify that the vehicles have registration stickers in the window. (1)(2)(4)</p> <p>...</p> <p>Verify that special wastes are stored separately from domestic and recyclable wastes. (1)(2)(4)(6)(8)(9)(13)(16)(17)(18)(19)(23)(30)(33)</p> <p>Verify that special wastes are stored in impervious containers. (1)(2)(4)</p> <p>Verify that the floor of the storage facility is impervious. (1)(2)(4)</p> <p>Verify that stormwater does not enter the storage facility. (1)(2)(4)</p> <p>Verify that storage containers are labeled with a sign indicating contents, volume, date storage began, etc. (1)(2)(4)</p> <p>...</p> <p>Verify that waste acids, waste alkalis, waste oil, waste organic solvents, waste catalysts, waste absorbing agents, waste agrochemicals, polychlorinated biphenyls (PCBs), and organic sludge are not stored for over 90 days (if volume exceeds 1000 kilograms (kg).) (1)(2)(23)</p> <p>(NOTE: If the volume of the listed special wastes is less than 1000 kg, they may be stored for 180 days.)</p> <p>Verify that other special wastes are not stored for over 120 days (if volume exceeds 1000 kg). (1)(2)(23)</p> <p>(NOTE: If the volume of other special wastes is less than 1000 kg, they may be stored for 240 days).</p> <p>...</p>

(1) Directorate of Engineering and Housing (DEH) (2) Environmental Coordinator (EC) (4) Safety and Health Officer (6) Director of Logistics (DOL) (8) Transportation/Maintenance Officer (DOL) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) Transfer, Storage, and Disposal Facility (TSDF) Operators (DEH, DOL, DRMO) (19) Shop Activity Supervisor (23) Defense and Restoration Marketing Office (DRMO) (30) Army/Air Force Exchange Service (AAFES) (33) Golf Course Pesticide Shop

**COMPLIANCE CATEGORY:
HAZARDOUS WASTE MANAGEMENT
Republic of Korea**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>DISPOSAL OF SPECIAL WASTES</p> <p>3-7. Installations are required to dispose of waste acids and waste alkalis in a specific manner (Decree of the Prime Minister to Implement the Waste Management Law, Article 31).</p> <p>...</p> <p>3-8. Installations are required to dispose of waste oils according to specific standards (Decree of the Prime Minister to Implement the Waste Management Law, Article 31).</p> <p>...</p>	<p>Verify that liquid-state acids or alkalis are disposed of in one of the following manners: (1)(2)(23)</p> <ul style="list-style-type: none"> - they are treated by neutralization, oxidation, or reduction - they are treated by evaporation and concentration before being solidified with cement or polymers - they are refined by separation, distillation, extraction, or filtration. <p>Verify that solid-state acids or alkalis are disposed of in a control-type landfill. (1)(2)(23)</p> <p>...</p> <p>Verify that liquid-state waste oils are disposed of by one of the following methods: (1)(2)(23)</p> <ul style="list-style-type: none"> - incineration - separation - distillation - extraction - filtration. <p>Verify that solid-state waste oil is incinerated. (1)(2)(23)</p> <p>Verify that tar-pitch is incinerated or disposed of in a control-type landfill. (1)(2)(23)</p> <p>...</p>

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**COMPLIANCE CATEGORY:
HAZARDOUS WASTE MANAGEMENT
Republic of Korea**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>3-9. Installations must dispose of waste organic solvents according to specific requirements (Decree of the Prime Minister to Implement the Waste Management Law, Article 31).</p> <p>...</p>	<p>Verify that oil/water separation is done if possible. (1)(2)(23)</p> <p>Verify that liquid-state halogens are disposed of by one of the following methods: (1)(2)(23)</p> <ul style="list-style-type: none"> - incineration - evaporation and concentration - separation, distillation, extraction, and filtration - neutralization, oxidation, or reduction. <p>(NOTE: All by-products from these methods must be incinerated.)</p> <p>Verify that solid-state halogens are disposed of by incineration. (1)(2)(23)</p> <p>Verify that liquid-state nonhalogens are disposed of by one of the following methods: (1)(2)(23)</p> <ul style="list-style-type: none"> - incineration - evaporation or concentration - separation, distillation, extraction, or filtration - neutralization, oxidation, or reduction. <p>(NOTE: All by-products from these methods must be incinerated.)</p> <p>Verify that solid-state nonhalogens are incinerated. (1)(2)(23)</p> <p>...</p>
<p>3-10. Installations must dispose of waste polymers according to specific methods (Decree of the Prime Minister to Implement the Waste Management Law, Article 31).</p> <p>...</p>	<p>Verify that waste synthetic resins or waste polymers that become hardened by heat are crushed or cut into 15 centimeter (cm) pieces or melted prior to being landfilled. (1)(2)(23)</p> <p>Verify that waste synthetic resins or waste polymers that do not become hardened by heat are incinerated. (1)(2)(23)</p> <p>Verify that waste synthetic rubber is incinerated. (1)(2)(23)</p> <p>Verify that waste paint or waste lacquer is incinerated. (1)(2)(23)</p> <p>...</p>
<p>3-11. Installations are required to dispose of scrap ores, particulate matter, waste sand, waste ceramics, incineration residue, waste catalysts, and waste absorbing agents by landfilling (Decree of the Prime Minister to Implement the Waste Management Law, Article 31).</p> <p>...</p>	<p>Verify that scrap ores, particulate matter, waste sand, waste ceramics, incineration residue, waste catalysts, and waste absorbing agents are landfilled. (1)(2)(23)</p> <p>(NOTE: Particulate matter must be placed in a polyethylene bag prior to landfilling.)</p> <p>...</p>

(1) Directorate of Engineering and Housing (DEH) (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Director of Logistics (DOL) (8) Transportation/Maintenance Officer (DOL) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) Transfer, Storage, and Disposal Facility (TSD/F) Operators (DEH, DOL, DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (30) Army/Air Force Exchange Service (AAPES) (33) Golf Course Pesticide Shop

**COMPLIANCE CATEGORY:
HAZARDOUS WASTE MANAGEMENT
Republic of Korea**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>REPORTING REQUIREMENTS</p> <p>3-12. Installations that collect or transport certain special wastes must submit a report to the heads of the local environment administration (Decree of the Prime Minister to Implement the Waste Management Law, Article 36).</p> <p>...</p> <p>OPERATING STANDARDS</p> <p>3-13. Installations that operate incinerators must meet certain operating requirements (Decree of the Prime Minister to Implement the Waste Management Law, Article 40).</p> <p>...</p>	<p>Determine if the installation collects or transports 50 kg/month (mo) or more of the following: (1)(2)(23)</p> <ul style="list-style-type: none"> - waste organic solvent - scrap ores - particulate matters - waste sand from casting or sandblasting - waste catalysts - waste agrochemicals - waste fireproof materials or waste ceramics. <p>Determine if the installation collects or transports 100 kg/mo or more of the following: (1)(2)(23)</p> <ul style="list-style-type: none"> - waste acids - waste alkalis - waste oils - waste synthetic polymers. <p>Verify that a report is submitted to the local environment administration. (1)(2)(23)</p> <p>...</p> <p>Determine if the installation operates an incinerator. (1)(2)(9)(18)(23)</p> <p>Verify that the combustion chamber exit is 700 °C or higher. (1)(2)(9)</p> <p>Verify that combustion residue is removed at regular intervals. (1)(2)(9)</p> <p>Verify that pressure in the chamber is maintained to prevent backflow or combustion gas. (1)(2)(9)</p> <p>Verify that the temperature of the discharge gas is maintained above the dew point. (1)(2)(9)</p> <p>Verify that wastes are incinerated so that the combusted residues have a reduction rate of 15 percent or less. (1)(2)(9)</p> <p>Verify that facilities with 125 kg/hour (h) or greater capacity are inspected every 3 years (yr). (1)(2)(9)</p> <p>...</p>

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**COMPLIANCE CATEGORY:
HAZARDOUS WASTE MANAGEMENT
Republic of Korea**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>3-14. Installations that operate high-temperature destruction facilities must meet certain operating requirements (Decree of the Prime Minister to Implement the Waste Management Law, Article 40).</p> <p>3-15. Installations with oil/water separation facilities must follow specific operating requirements (Decree of the Prime Minister to Implement the Waste Management Law, Article 40).</p>	<p>Determine if the installation operates a high-temperature destruction facility. (1)(2)(23)</p> <p>Verify that the temperature of the destruction chamber is 1100 °C or higher. (1)(2)(23)</p> <p>Verify that wastes are destroyed so that combusted residues have a reduction rate of 5 percent or less. (1)(2)(23)</p> <p>Verify that facilities with 125 kg/h or greater capacity are inspected every 3 yr. (1)(2)(23)</p> <p>...</p> <p>Determine if the installation operates any oil/water separation facilities. (1)(2)(23)</p> <p>Verify that recovered oil is channeled to the recovered oil tank. (1)(2)(23)</p> <p>Verify that filters are replaced or cleaned at regular intervals. (1)(2)(23)</p> <p>Verify that facilities with 625 kg/h or greater capacity are inspected every 3 yr. (1)(2)(23)</p>

(1) Directorate of Engineering and Housing (DEH) (2) Environmental Coordinator (EC) (4) Safety and Health Officer (6) Director of Logistics (DOL) (8) Transportation/Maintenance Officer (DOL) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) Transfer, Storage, and Disposal Facility (TSDF) Operators (DEH, DOL, DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (30) Army/Air Force Exchange Service (AAPES) (33) Golf Course Pesticide Shop

Appendix 3-1

Types of Special Waste

Halogens:

Dichloromethane	Trichloromethane
Tetrachloromethane	Dichlorodifluoromethane
Trichlorofluoromethane	Dichloroethane
Trichloroethane	Trichlorotrifluoroethane
Trichlorethylene	Tetrachloroethylene
Chlorobenzene	Dichlorobenzene
Monochlorophenol	Dichlorophenol
Trichlorophenol	

Others:

Glyceroltriacetate	n-Butylalcohol
n-Hexane	Nitrobenzene
Decahydronaphthalene	Dimethylsulfide
Dimethylformamide	Diacetin
Diethyleneglycol	Diethylsulfoxide
Diethyleneether	Dioxan
Methanol	Methylacetate
Methyl ethyl ketone	Methyl isobutyl ketone
Methylphenol	Benzene
Butylacetate	Cyclohexanone
Cyclohexane	Acetone
Ethanol	Ethleneglycol
Ethylglycol	Ethylbenzene
Ethylacetate	Ethylether
Ethylphenol	Butanol
Propanol	Kerosene
Cresol	Xylene
Terpentin	Tetrahydronaphthalene
Tetrahydrofuran	Toluene
Triethyleneglycol	Phenol
Formaldehyde	Propyleneglycol
Pyridin	

Waste synthetic polymers:

Waste synthetic resins	Waste synthetic textiles
Waste synthetic rubbers	Waste synthetic leathers
Waste paints and waste lacquers	Other waste synthetic polymers

Waste asbestos

Appendix 3-1 (continued)

Scrap ores and particulate matter:

- lead or its compounds (limited to the cases where lead content is 3 milligrams (mg)/liter (L) or more in the liquid extracted from the official inspection method for waste processing)
- copper or its compounds (limited to the cases where copper content is 3 mg/L or more in the liquid extracted from the official inspection method for waste processing)
- arsenic or its compounds (limited to the cases where arsenic content is 1.5 mg/L or more in the liquid extracted from the official inspection method for waste processing)
- mercury or its compounds (limited to the cases where mercury content is 0.005 mg/L or more in the liquid extracted from the official inspection method for waste processing)
- cadmium or its compounds (limited to the cases where cadmium content is 0.3 mg/L or more in the liquid extracted from the official inspection method for waste processing)
- hexavalent chromium compounds (limited to the cases where hexavalent chromium content is 1.5 mg/L or more in the liquid extracted from the official inspection method for waste processing)
- cyanide compounds (limited to the cases where cyanide content is 1.0 mg/L or more in the liquid extracted from the official inspection method for waste processing)
- organic phosphorous compounds (limited to the cases where organic phosphorous content is 1.0 mg/liter or more in the liquid extracted from the official inspection method for waste processing)
- tetrachloroethylene or its compound (limited to the cases where tetrachloroethylene content is 0.1 mg/L or more in the liquid extracted from the official inspection method for waste processing)
- trichloroethylene or its compound (limited to the cases where trichloroethylene content is 0.3 mg/L or more in the liquid extracted from the official inspection method for waste processing).

Waste sand from casting or sandblasting

Waste fireproof materials or scrap ceramics glazed at the time of first firing

Combustion debris

Stabilizing agents or solidifying agents

Waste catalysts

Waste adsorbing agents or waste absorbing agents

Waste agrochemicals

Wastes containing PCB: liquids (limited to those containing 50 mg/L or more of PCB); others (limited to the cases in which 50 mg or more of PCB is found in wastewater).

Appendix 3-1 (continued)

Sludges (limited to those containing 95 percent or less water):

Sludges from wastewater disposal facility (limited to those from water pollution prevention facility built by businessman pursuant to Article 10-1 of the Water Environment Preservation Law or from joint wastewater terminal treatment facility pursuant to Article 26 of the same law; those from water purifying station shall be excluded)

Sludges from manufacturing (limited to those from manufacturing plant)

Sludges from facilities designated by the Administration of Environment in the Official Gazette.

Waste plaster

Waste lime

Animal residues: residues generated in leather or wool processing, residues generated in meat processing, and residues generated in fish processing.

Other harmful wastes announced by the Administration in the Official Gazette.

INSTALLATION:	COMPLIANCE CATEGORY: Hazardous Waste Management Republic of Korea	DATE:	REVIEWER(S):
STATUS NA C RMA	REVIEWER COMMENTS:		

(1) Directorate of Engineering and Housing (DEH) (2) Environmental Coordinator (EC) (4) Safety and Health Officer (6) Director of Logistics (DOL) (8) Transportation/Maintenance Officer (DOL) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) Transfer, Storage, and Disposal Facility (TSDF) Operators (DEH, DOL, DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (30) Army/Air Force Exchange Service (AAFES) (33) Golf Course Pesticide Shop

SECTION 4

NATURAL AND CULTURAL RESOURCES MANAGEMENT

Section 4

NATURAL AND CULTURAL RESOURCES MANAGEMENT

A. Applicability

This protocol applies to all U.S. Armed Forces installations located in the Republic of Korea. In particular, it applies to the proper identification and care of Korean cultural and natural resources in areas under the control of U.S. Armed Forces. This protocol places heavy emphasis on the cultural aspects of natural and cultural properties protection because of the lack of material on the protection of natural properties.

B. National Laws and Regulations

These are the basic laws and regulations concerning the protection of historic cultural properties. Their purpose is to contribute to the cultural advancement and development of the public through the means of the preservation and utilization of certain important cultural properties. The law provides for a Committee on Cultural properties within the Ministry of Culture to advise the Minister concerning preservation, administration, and utilization of cultural properties. Specifically, they advise on the following issues: the designation and cancellation of the designation of certain cultural properties, protected objects and areas; orders for restriction or prohibition of certain action and for the establishment, elimination or removal of facilities for environmental conservation of specified cultural properties; excavation of buried cultural properties; and specialized or technical matters considered important concerning preservation, administration, or utilization of specified properties. The implementing regulations stipulate criteria for the designation of important cultural and historic properties and provide standards for the protection of these items.

- *Cultural Properties Protection Act* (Law No. 961 of 10 January 1962 as amended through Law No. 4183 of 30 December 1989)
- *Presidential Decree for the Implementation of the Cultural Properties Protection Act* (Presidential Decree No. 12895, 3 January 1990)
- *Ministry of Culture Order to Implement the Cultural Properties Protection Act* (Ministry of Culture Order No. 2, 29 March 1990)

C. Provincial Laws and Regulations

At the present time, specific laws and regulations concerning the identification and care of Korean natural and cultural properties for the provinces in which Armed Forces installations are located are unavailable.

D. Key Compliance Definitions

- *Buried Cultural Property* - a cultural property that was buried under the land, the sea bottom, or a construction project and that has been discovered.
- *Certificate of Designation* - issued by the Minister of Culture and Information to the owner of a national treasure, a treasure, or important folk-lore material.
- *Certificate of Recognition* - issued by the Minister of Culture and Information to the holder of an important intangible cultural property.
- *Cultural Properties* - this refers to the following list:
 1. *Tangible Cultural Properties*: buildings, classical books, calligraphic works, ancient documents, pictures, sculptures, industrial art objects, and other tangible cultural products that possess high historical or artistic value and other archeological specimens that belong to categories above. See also "Treasure."
 2. *Intangible Cultural Properties*: drama, music, dance, techniques in industrial art, and other intangible cultural products that possess high historical or artistic value. See also "Important Intangible Cultural Property."
 3. *Monuments*: shell-mounds, ancient tombs, castle sites, palace sites, pottery remains, layers containing remains, and other sites of historical remains that possess high historical or scientific value, scenic beauties that possess high artistic or ornamental values and animals (including the places of habitat, breeding, and migration), plants (including the habitat), minerals, and caves that have high scientific value. See also "Historic Sites, Scenic Beauties and Natural Monuments."
 4. *Folk-lore Materials*: clothing, eating, dwelling, occupations, religions, and annual events, that are related to public morals and customs and clothers, tools or apparatuses, and houses used therefore, that are indispensable for understanding the change and progress of the people's life. See also "Important Folk-lore Materials."
- *Designated Cultural Properties* - this refers to the following:
 1. *Nation Designated Cultural Properties*: cultural properties that are designated by the Minister of Culture and Information (See above list).
 2. *City Province Designated Cultural Properties*: cultural properties that are not Nation Designated Cultural Properties but are deemed worthy of

preservation and that are designated by the Mayor of Seoul Special City, the Mayor of the city under the direct control of the government, or the Governor of the province that has jurisdiction over the property.

3. **Materials of Cultural Properties:** cultural properties that are designated by the Mayor of Seoul Special City, the Mayor of the city under the direct control of the government, or the Governor of a province.
- *Historic Sites, Scenic Beauties, and Natural Monuments* - those especially important items chosen from the list of monuments and designated by the Minister of Culture and Information, after deliberation by the Committee on Cultural Properties.
 - *Important Folk-lore Materials* - especially important materials as chosen by the Minister of Culture and Information, after deliberation by the Committee on Cultural Properties.
 - *Important Intangible Cultural Property* - those certain items determined by the Minister of Culture and Information, after deliberation by the Committee on Cultural Properties, as being especially important and worthy of special protection measures.
 - *National Treasure* - cultural properties chosen by the Minister of Culture and Information after deliberation by the Committee on Cultural Properties, that are rare and of great value from the standpoint of human culture but are not designated as "Treasures."
 - *Protected Objects and Protected Areas* - a designation from the Minister of Culture and Information for certain national treasures, treasures, historical sites, scenic beauties, natural monuments, and important folk-lore material when it is especially necessary for the protection of such cultural properties.
 - *Treasure* - especially important tangible cultural properties as designated by the Minister of Culture and Information, after deliberation by the Committee on Cultural Properties.

NATURAL AND CULTURAL RESOURCES MANAGEMENT PROTOCOL GUIDANCE FOR WORKSHEET USERS

	REFER TO WORKSHEET ITEMS:	CONTACT THESE PERSONS OR GROUPS: (*)
All Installations	4-1 through 4-7	(1)(2)(16)(21)(22)(26)
Cultural Properties	4-8 and 4-9	(1)(2)(9)(16)

(*)CONTACT/LOCATION CODE:

- (1) Directorate of Engineering and Housing (DEH)
- (2) Environmental Coordinator (EC)
- (9) Chief of Operations and Maintenance (O&M)
- (16) Building and Grounds Division (DEH)
- (21) Public Affairs Office (PAO)
- (22) Staff Judge Advocate
- (26) Master Planner (DEH)

COMPLIANCE CATEGORY:
NATURAL AND CULTURAL RESOURCES MANAGEMENT
Republic of Korea

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>ALL INSTALLATIONS</p> <p>4-1. Determine actions or changes since previous review of natural and cultural resources (GMP).</p> <p style="text-align: center;">...</p> <p>4-2. Copies of all relevant Korean laws and regulations on natural and cultural resource management should be maintained at the installation (GMP).</p> <p style="text-align: center;">...</p> <p>4-3. Designated treasures, national treasures, important intangible cultural properties, historic sites, scenic beauties, natural monuments, important folk-lore materials, protected objects, and protected areas located at or on the installation must be identified (Cultural Properties Protection Act, Chapter 2, Articles 4 - 8).</p> <p style="text-align: center;">...</p> <p>4-4. The Minister of Culture may issue instructions on the administration and conservation of designated cultural properties (Cultural Properties Protection Act, Chapter 2, Section 2, Article 14).</p> <p style="text-align: center;">...</p>	<p>Obtain a copy of previous report and determine if noncompliance issues have been resolved. (1)(2)</p> <p style="text-align: center;">...</p> <p>Determine if copies of the following regulations are maintained and kept current at the installation: (1)(2)(22)</p> <ul style="list-style-type: none"> - <i>Environmental Policy Fundamental Law.</i> - <i>Presidential Decree to Implement the Environmental Policy Fundamental Law.</i> - <i>Cultural Properties Protection Act.</i> - <i>Presidential Decree to Implement the Cultural Properties Protection Act.</i> - <i>Ministry of Culture Order to Implement the Cultural Properties Protection Act.</i> <p style="text-align: center;">...</p> <p>Verify that these items of natural and cultural importance have been surveyed and identified. (1)(2)(21)(26)</p> <p style="text-align: center;">...</p> <p>Determine if the installation has received specific instructions on the administration and conservation of any designated cultural properties. (2)</p> <p>Verify that instructions are being followed. (1)(2)</p> <p style="text-align: center;">...</p>

(1) Directorate of Engineering and Housing (DEH) (2) Environmental Coordinator (EC) (9) Chief of Operations and Maintenance (O&M) (16) Building and Grounds Division (DEH) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate (26) Master Planner (DEH)

COMPLIANCE CATEGORY:
NATURAL AND CULTURAL RESOURCES MANAGEMENT
Republic of Korea

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>4-5. Signs must be posted at nation designated cultural properties or areas, and properties must be well managed (Ministry of Culture Order to Implement the Cultural Properties Protection Act, Articles 13 - 17).</p> <p style="text-align: center;">...</p>	<p>Verify that stone posts are in place to indicate objects or areas that have been designated as national treasures, treasures, important folklore material, a historical site, or scenic beauty. (1)(2)</p> <p>Verify that: (1)(2)</p> <ul style="list-style-type: none"> - stone posts are clearly visible - front of the stone post indicates the type, registered number, and name of the nation designated cultural property - back of the stone post indicates the designated date and the administrative body responsible for designation - information on the post is displayed in Korean - stone post meets specific size and shape requirements. <p>Verify that guide signs are in place to provide information on nation designated cultural properties. (1)(2)</p> <p>Verify that: (1)(2)</p> <ul style="list-style-type: none"> - guide signs are clearly visible - sign briefly explains history, characteristics, and historical significance of the nation designated cultural property - sign is written in formal Korean letters on the left and formal English letters on the right - guide sign meets specific size and shape requirements. <p>Verify that warning signs are posted in areas where nation designated cultural properties are concentrated or in their protection area. (1)(2)</p> <p>Verify that: (1)(2)</p> <ul style="list-style-type: none"> - sign shows regulations on management and protection - sign is posted on the border of the area where nation designated cultural properties are concentrated or on the border of their protection area - sign is written in formal Korean letters on the left and formal English letters on the right - warning sign meets specific size and shape requirements. <p>Verify that the contents of guide boards have been checked by the head of the Cultural Properties Office prior to posting. (1)(2)</p> <p style="text-align: center;">...</p>
<p>4-6. Permission is required from the Minister of Culture and Information before specific actions are taken (Cultural Properties Protection Act, Chapter 2, Section 2, Article 20).</p>	<p>Verify that permission has been received before: (1)(2)</p> <ul style="list-style-type: none"> - the capturing, gathering, or carrying out of animals, plants, or minerals from the areas that are designated or provisionally designated as a scenic beauty, a natural monument, or from the protected areas - rubbing or imitating a nation designated cultural property and photographing that involves apprehension to influence its preservation - changing a present nation designated cultural property, including the protected object and protected area, or conducting an act that involves apprehensions to influence its preservation.

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COMPLIANCE CATEGORY:
NATURAL AND CULTURAL RESOURCES MANAGEMENT
Republic of Korea

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>4-7. A report must be made to the Minister of Culture when specific actions are taken or incidents occur (Cultural Properties Protection Act, Chapter 2, Section 2, Article 27).</p> <p style="text-align: center;">...</p> <p>CULTURAL PROPERTIES</p> <p>4-8. The discovery of any buried cultural property must be reported to the Minister of Culture and the present state of the cultural property must not be changed (Cultural Properties Protection Act, Chapter III, Article 43 and the Ministry of Culture Order for the Cultural Properties Protection Act, Article 37).</p> <p style="text-align: center;">...</p> <p>4-9. Nation designated cultural properties that belong to real properties, historical sites, scenic beauty, and natural monuments must be open to the public unless permission to close them is received from the Minister of Culture (Cultural Properties Protection Act, Chapter 2 Section 3, Article 34).</p>	<p>Verify that a procedure is in place to report the following: (1)(2)</p> <ul style="list-style-type: none"> - when a nation designated cultural property has been ruined, lost, stolen, destroyed, or damaged - when a change has taken place with permission. <p style="text-align: center;">...</p> <p>Determine if any buried cultural properties have been found on the installation and if they were reported. (1)(2)(9)(16)</p> <p>Verify that the report included the following information: (1)(2)(9)(16)</p> <ul style="list-style-type: none"> - permission number and date of excavator modification - starting and ending dates of excavation and modification - result of excavation or modification - survey drawings, plane drawings, profile drawings of the excavated site - organization of a team that conducted the excavator modification - expenses and funding sources - description of categories, quantities, types, sizes, and conditions of excavated items and their photographs. <p style="text-align: center;">...</p> <p>Determined if there are nation designated cultural properties not open to the public at the installation. (1)(2)</p> <p>Verify that permission has been received from the Minister of Culture to have designated cultural properties closed to the public. (1)(2)</p>

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INSTALLATION:	COMPLIANCE CATEGORY: Natural & Cultural Resources Management Republic of Korea	DATE:	REVIEWER(S):
STATUS NA C RMA	REVIEWER COMMENTS:		

(1) Directorate of Engineering and Housing (DEH) (2) Environmental Coordinator (EC) (9) Chief of Operations and Maintenance (O&M) (16) Building and Grounds Division (DEH) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate (26) Master Planner (DEH)

SECTION 5

ENVIRONMENTAL NOISE MANAGEMENT

Section 5

ENVIRONMENTAL NOISE MANAGEMENT

A. Applicability

This protocol applies to all U.S. Armed Forces installations located in the Republic of Korea. It applies to facilities discharging noise and vibration and also to certain motor vehicles.

B. National Laws and Regulations

These are the new laws and regulations concerning the limitation of the effects of noise and vibration on people. The law mandates the establishment of monitoring networks to measure the levels of noise and vibration. To establish this network, the government is empowered to expropriate or use "lands, structures and other assets fixed thereon which are necessary to establish the monitoring network." In addition, the laws and regulations require self-monitoring of noise and vibration levels by those emitting certain levels of noise and vibration. The law and its related presidential decree and decree of the premier set out permissible maximum limits on noise and vibration emissions from certain "discharge facilities." In extreme circumstances, such as when the operator of a discharge facility cannot comply with noise and vibration standards, the Minister of Environment Administration may order the suspension of operation of the facility emitting inappropriate levels of noise and/or vibration. Also, in certain circumstances, the government may establish special noise and vibration control zones designed and maintained to limit certain types, levels, and time periods of noise and vibration generating activities. To accomplish the reduction of noise and vibration to certain standards, the government, among other measures, may prohibit the use of horns, limit vehicular speed, or establish certain detours for vehicles. Noise levels for automobiles may also be checked for adherence to the proper levels.

- *Noise/Vibration Control Law* (Law No. 4295, 1 August 1990)
- *Presidential Decree to Implement the Noise/Vibration Control Law* (Presidential Decree No. 13260, 28 January 1991)
- *Decree of the Prime Minister to Implement the Noise/Vibration Control Law* (Decree of the Prime Minister No. 378, 2 February 1991)

C. Provincial Laws and Regulations

At this time, specific laws and regulations from the provinces are not available. The following is a task the mayor or governor may perform:

Monitoring/Measuring - the Mayor or Governor may establish the monitoring network and measure the level of noise and/or vibration on a regular basis to examine the state of the noise and/or vibration in his jurisdictional area.

D. Key Compliance Definitions

- *Automobiles* - such automobiles as defined by Article 2 of the Automobile Management Law and those heavy-duty vehicles as defined by Article 2-1 of the Heavy-duty Vehicles Management Law (see Appendix 5-1).
- *Businessman* - any person with permission to establish or modify a discharge facility.
- *Domestic Noise Control Zone* - an area prescribed by the Minister of Environment Administration to which certain noise standards apply in order to preserve the living environment of its residents and to prevent noise damage from various domestic sources.
- *Factories* - those facilities as prescribed by the Industry Allocation Law.
- *Improvement Order* - an order that may be issued by the Minister of Environment Administration when noise and/or vibration limits of a noise and/or vibration discharge facility are deemed to have violated the permissible discharge standards prescribed in Article 8 or Article 12-3 of the Noise/Vibration Control Law. This order may direct the respective businessman to establish, improve, replace, or take any other necessary measures on the discharge facilities or the prevention facilities within a period prescribed by the Decree of the Prime Minister.
- *Mayor or Governor* - the Mayor of the Special City of Seoul, mayors of the direct control cities (Busan, Incheon, Kwangju, Daejun, Daegu), or governors of the provinces.
- *Noise* - violent sound caused by the use of machines, instruments, facilities, and the like.

- *Noise/Vibration Control Zone* - an area designated by the Mayor or Governor where it is deemed necessary to prevent noise and/or vibration from special construction works in order to preserve the living environment of the residents of that area.
- *Noise/Vibration Discharge Facilities* - those machines, instruments, facilities, and the like that generate noise and vibration (see Appendix 5-2).
- *Noise/Vibration Prevention Facilities* - those facilities that remove or reduce noise and/or vibration from noise and/or vibration discharge facilities (see Appendix 5-3).
- *Transportation* - refers to trains, automobiles, streetcars, roadways, and railroads; airplanes and ships are excluded.
- *Soundproof Facilities* - those facilities that remove or reduce noise from sources other than noise and/or vibration discharge facilities.
- *Vibration* - a strong shake caused by the use of machines, instruments, facilities, and the like.
- *Vibration Proofing Facilities* - facilities, other than noise and/or vibration discharge facilities, that remove or reduce vibration from the sources.

ENVIRONMENTAL NOISE MANAGEMENT PROTOCOL GUIDANCE FOR WORKSHEET USERS

	REFER TO WORKSHEET ITEMS:	CONTACT THESE PERSONS OR GROUPS: (*)
All installations	5-1 through 5-13	(1)(2)(6)(8)(9)(10)(12)(13)(14)(16) (22)(32)

(*)CONTACT/LOCATION CODE:

- (1) Directorate of Engineering and Housing (DEH)
- (2) Environmental Coordinator (EC)
- (6) Director of Logistics (DOL)
- (8) Transportation/Maintenance Officer (DOL)
- (9) Chief of Operations and Maintenance (O&M)
- (10) Range Control (DPTMSEC)
- (12) Director of Plans, Training, Mobilization, and Security (DPTMSEC)
- (13) Engineering, Plans, and Services (EP&S)
- (14) Wastewater Treatment Plant Supervisor (O&M)
- (16) Building and Grounds Division (DEH)
- (22) Staff Judge Advocate
- (32) Directorate of Resource Management (DRM), Internal Control

**COMPLIANCE CATEGORY:
ENVIRONMENTAL NOISE MANAGEMENT
Republic of Korea**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>ALL INSTALLATIONS</p> <p>5-1. Determine actions or changes since previous review of noise (GMP).</p> <p style="text-align: center;">...</p> <p>5-2. Copies of all relevant Korean laws and regulations on noise management should be maintained at the installation (GMP).</p> <p style="text-align: center;">...</p> <p>5-3. Installations are required to meet general noise emissions limits (Presidential Decree to Implement the Environmental Policy Fundamental Law, Article 2).</p> <p style="text-align: center;">...</p> <p>5-4. When an item/facility that produces noise/vibrations exceeds the noise/vibrations limits, the Minister of the Environment Administration may require the installation to establish, remove, improve, or take other necessary measures within a specific period of time or to suspend operations (Noise/Vibration Control Law, Articles 15, 16, and 17).</p> <p style="text-align: center;">...</p>	<p>Obtain a copy of previous report and determine if noncompliance issues have been resolved. (1)(2)</p> <p style="text-align: center;">...</p> <p>Determine if copies of the following regulations are maintained and kept current at the installation: (1)(2)(10)(22)</p> <ul style="list-style-type: none"> - <i>Environmental Policy Fundamental Law.</i> - <i>Presidential Decree to Implement the Environmental Policy Fundamental Law.</i> - <i>Public Health Act.</i> - <i>Noise/Vibration Control Law.</i> - <i>Presidential Decree to Implement the Noise/Vibration Control Law.</i> - <i>Decree of the Prime Minister to Implement the Noise/Vibration Control Law.</i> <p style="text-align: center;">...</p> <p>Verify that noise emissions are kept within the limits outlined in Appendix 5-4. (1)(2)(8)(9)(10)(13)(16)(32)</p> <p style="text-align: center;">...</p> <p>Determine if the installation has been ordered by the Minister of the Environment Administration to take any specific actions within a designated period of time. (1)(2)(8)(9)(10)(13)(16)</p> <p>Verify that any necessary actions have been taken. (1)(2)(8)</p> <p style="text-align: center;">...</p>

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**COMPLIANCE CATEGORY:
ENVIRONMENTAL NOISE MANAGEMENT
Republic of Korea**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>5-5. Prior to building a facility that will emit noise/vibration discharges or modifying such a facility, installations are required to obtain permission from the Minister of Environmental Administration (Noise/Vibration Control Law, Article 9; Presidential Decree to Implement the Noise/Vibration Control Law, Article 2; Decree of the Prime Minister to Implement the Noise/Vibration Control Law, Article 8).</p> <p>(NOTE: Permission for modification is necessary only if the expansion is 20 percent or greater of the original approved size or if the location of the facility has changed.)</p>	<p>Determine if a procedure is in place to request permission by routing the following documents to the Minister of Environmental Administration through the Mayor of Seoul, mayors of cities under direct control of the national government, or governors of the provinces: (1)(2)</p> <ul style="list-style-type: none"> - detailed description of proposed project - construction progress plan - predicted amounts of noise and/or vibrations - detailed descriptions of antipollution facilities and their blueprints. <p>Verify that permission has been received from the Environmental Administration. (1)(2)</p>

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**COMPLIANCE CATEGORY:
ENVIRONMENTAL NOISE MANAGEMENT
Republic of Korea**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>5-6. When a noise/vibration discharge item/facility is being built or modified, a noise/vibration prevention facility must also be built that is designed and executed by a registered individual, unless the noise/vibration emissions are below the permissible limits and it is determined that there is no likely cause of damage to the living environment (Noise/Vibration Control Law, Articles 10 through 13; Decree of the Prime Minister to Implement the Noise/Vibration Control Law, Article 12).</p> <p>(NOTE: Facilities are exempt from this requirement if no residential buildings, shopping malls, schools, hospitals, religious buildings, factories, workshops, or tourism sites are found within 200 meters (m) of the border of the discharge facility.)</p> <p>...</p> <p>5-7. Installations are required to meet permissible standards of noise/vibration generated from noise/vibration facilities (Noise/Vibration Control Law, Article 8; Decree of the Prime Minister to Implement the Noise/Vibration Control Law, Article 6).</p> <p>...</p>	<p>Determine if the installation has been granted any exemptions from the requirement to have a noise/vibration prevention facility. (1)(2)(9)(10)</p> <p>Verify that noise/vibration prevention facilities have been designed and executed by individuals who are registered as prevention facility businessmen unless: (1)(2)(9)(10)</p> <ul style="list-style-type: none"> - the noise/vibration prevention facility built was prescribed by the Decree of the Prime Minister, or - approval has been received from the Minister of the Environment. <p>Determine if the installation has any joint noise/vibration prevention facilities for joint treatment of discharges from more than one discharge item/facility. (1)(2)(9)(10)</p> <p>Verify that permission has been received from the Minister of the Environment Administration for the construction or modification of a joint noise/vibration prevention facility. (1)(2)(9)(10)</p> <p>Verify that once the prevention facility is completed a report is submitted to the Minister of the Environment Administration within 15 days. (1)(2)</p> <p>...</p> <p>Verify that the standards in Appendix 5-5 are being met. (1)(2)(9)(10)</p>

(1) Directorate of Engineering and Housing (DEH) (2) Environmental Coordinator (EC) (6) Director of Logistics (DOL) (8) Transportation/Maintenance Officer (DOL) (9) Chief of Operations and Maintenance (O&M) (10) Range Control (DPTMSEC) (12) Director of Plane, Training, Mobilization, and Security (DPTMSEC) (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (22) Staff Judge Advocate (32) Directorate of Resource Management (DRM), Internal Control

**COMPLIANCE CATEGORY:
ENVIRONMENTAL NOISE MANAGEMENT
Republic of Korea**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>5-8. Motor vehicles are required to meet specific noise standards (Noise/Vibration Control Law, Article 36; Presidential Decree to Implement the Noise/Vibration Control Law, Article 10; Decree of the Prime Minister to Implement the Noise/Vibration Control Law, Article 52).</p> <p>...</p>	<p>Verify that the standards outlined in Appendix 5-6 are met. (1)(2)(8)</p> <p>...</p>
<p>5-9. The Mayor or Governor may designate special areas where noise from special construction or traffic is to be prevented (Noise/Vibration Control Law; Article 23, 25, 28 - 31).</p> <p>...</p>	<p>Determine if there have been any special noise/vibration control zones designated in the area of the installation. (1)(2)</p> <p>Determine if the installation has scheduled or has in progress any special construction in such a zone. (1)(2)</p> <p>Verify that a report has been submitted to the Mayor or Governor concerning the special construction. (1)(2)</p> <p>Determine if the Mayor or Governor has established traffic noise control limitations. (1)(2)</p> <p>...</p>
<p>5-10. Installations are required to monitor noise and keep records of the monitoring (Noise/Vibration Control Law, Article 20; Decree of the Prime Minister to Implement the Noise/Vibration Control Law, Article 27).</p> <p>...</p>	<p>Verify that monitoring follows the schedule in Appendix 5-7. (1)(2)(6)(9)(10)(12)(13)(14)</p> <p>Verify that monitoring records are kept for 3 years (yr). (1)(2)</p> <p>...</p>
<p>5-11. Installations are required to keep records of the operation of noise/vibration discharge items/facilities and prevention facilities (Noise/Vibration Control Law, Article 14; Decree of the Prime Minister to Implement the Noise/Vibration Control Law, Article 19).</p> <p>...</p>	<p>Verify that records contain the following information: (2)(6)(9)(10)(12)</p> <ul style="list-style-type: none"> - operation hours of discharge/prevention facility - management state of the facilities - names of facility managers - any other pertinent information relating to facility operation. <p>Verify that records are kept for 3 yr. (2)(6)</p> <p>...</p>

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**COMPLIANCE CATEGORY:
ENVIRONMENTAL NOISE MANAGEMENT
Republic of Korea**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>5-12. When explosives are being used in a stone quarry or construction place, the Mayor or Governor may require the installation to take measures to control the noise and vibrations and/or to submit reports according to the requirements outlined in the Decree of the Prime Minister (Noise/Vibration Control Law, Article 27; Decree of the Prime Minister to Implement the Noise/Vibration Control Law, Article 35).</p> <p align="center">...</p> <p>5-13. When deemed necessary by the Minister of the Environment Administration, the installation may be required to reduce airplane noise (Noise/Vibration Control Law, Article 42).</p>	<p>Verify that, if required, a report is issued to the Mayor/Governor at least 7 days before the start of work. (1)(2)(12)(13)</p> <p align="center">...</p> <p>Determine if the Minister of the Environment Administration has required the installation to reduce airplane noise. (2)(10)</p> <p>Verify that any restrictions are being followed. (2)(10)</p>

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Appendix 5-1

Types of Automobiles

1. Light Duty Automobiles
 - automobiles for a very small number of passengers or small amount of freight
 - engine size (emission): less than 800 cubic centimeters (cc)
2. Passenger Automobiles
 - ordinary passenger automobiles
 - engine size (emission): 800 cc or larger
 - weight: less than 3 tons
3. Small Freight Automobiles
 - ordinary freight automobiles
 - engine size (emission): 800 cc or larger
 - weight: less than 3 tons
4. Heavy Duty Automobiles
 - automobiles for a very large number of passengers or large amount of freight
 - weight: 3 tons or larger
5. Two Wheel Automobiles
 - automobiles with two wheels for one or two passengers
 - engine size (emission): 50 cc or larger
 - weight: less than 0.5 ton

NOTES:

1. Passenger automobiles include wagons.
2. Small freight automobiles include Jeeps and vans.
3. Special equipment (e.g., those from Caterpillar Company) that are included in the type of heavy duty automobiles will be announced in the Official Gazette by the Minister of the Environment Administration.

Appendix 5-2

Noise/Vibration Discharge Facility

1. Noise Discharge Facility

- structure, machine, and equipment using motive power (by horse power (hp)):
 - compressor with 10 hp or more
 - ventilator with 10 hp or more
 - cutter with 10 hp or more
 - presser with 10 hp or more
 - crusher with 15 hp or more
 - transmitter with 20 hp or more
 - lathe with 20 hp or more
 - flour maker with 20 hp or more
 - saw (at lumber mill) with 20 hp or more
 - wood processing facility with 20 hp or more
 - printing facility with 20 hp or more
 - roller with 30 hp or more
 - any facility with more than one structure, machine, or equipment listed above will be considered a discharge facility if its total horse power in the same category exceeds 35 hp, even if individual horse power does not reach the criteria listed above.
 - any facility with more than one structure, machine, or equipment listed above will be considered a discharge facility if its total horse power in the same category exceeds the criteria listed above.
- structure, machine, and equipment using motive power (by number):
 - 80 or more industrial sewing machines
 - cement brick or cement block manufacturing facility with four pressers and/or vibrators.

2. Vibration Discharge Facility

- press with 20 hp or more (oil-pressure driven is excluded)
- crusher with 30 hp or more
- wood processing facility with 30 hp or more
- casting instrument with 35 hp or more
- cement brick or cement block manufacturing facility with four or more pressers or vibrators.

(NOTE: Kilowatts (kw) will be converted to hp by multiplying by 1.3 and rounding decimal digits.)

Appendix 5-3

Noise/Vibration Prevention Facilities

1. Noise/Vibration Prevention Facility

- noise prevention facility:
 - silencer
 - noise proofing cover
 - noise proofing window and room
 - noise proofing surface
 - noise proofing wall
 - noise proofing tunnel
 - noise proofing forest and hill
 - noise absorbing equipment and facility
 - other facility that is equivalent to or better than those listed above.
- vibration prevention facility:
 - elastic supporter and vibration suppressor
 - vibration preventing furrow
 - pipe vibration prevention facility
 - other facility that is equivalent to or better than those listed above.

2. Soundproofing Facility

- silencer
- noise proofing cover
- noise proofing window and room
- noise proofing surface
- noise proofing wall
- noise proofing tunnel
- noise proofing forest and hill
- noise absorbing equipment and facility
- other facility that is equivalent to or better than those listed above.

3. Vibration-Absorption Facility

- elastic supporter and vibration suppressor
- vibration preventing furrow
- pipe vibration prevention facility
- other facility that is equivalent to or better than those listed above.

Appendix 5-4

General Noise

General Areas		
Area	Standards (leq dB(A))	
	Daytime (0600 - 2200)	Night(2200 - 0600)
I	50	40
II	55	45
III	65	55
IV	70	65
Road Side		
I, II	65	55
III	70	60
IV	75	70

* Not applicable to noise from trains and construction activities.

Category I includes:

1. Natural Environmental Preservation Areas, tour/recreation areas, and settlement areas prescribed in Article 6 of the Land Use and Management Law
2. Green Belt prescribed in Article 17 of the Urban Planning Law
3. exclusive residential areas prescribed in Article 15 of the Presidential Decree for the Urban Planning Law
4. area within 50 m of the boundary of the hospital prescribed in Article 3 of the Medical Law
5. areas within 50 m of the boundary of the schools prescribed in Article 81 of the Education Law.

Category II includes:

1. all settlement areas other than residential sectors prescribed in Article 6 of the Land Use and Management Law
2. general and semiresidential areas prescribed in Article 15 of the Presidential Decree for the Urban Planning Law.

Category III includes:

1. commercial area prescribed by Article 17 of the Urban Planning Law
2. semi-industrial areas prescribed in Article 15 of the Presidential Decrees for the Urban Planning Law.

Category IV includes:

1. general and exclusive industrial areas prescribed in Article 15 of the Presidential Decree for the Urban Planning Law
2. industrial area prescribed in Article 6 of the Land Use and Management Law.

Appendix 5-5

Permissible Standards of Noise/Vibration Generated from Noise/Vibration Discharge Facilities

1. Noise: final noise level after calibration according to the following table must be 50 dB(A) or less.

Category	Description	Calibration Coefficient
Blast	Sudden outburst of sound	+5
Percentage of noise duration to the period concerned ¹	50% or more	0
	25% or more, and less than 50%	-5
	12.5% or more, and less than 25%	-10
	Less than 12.5%	-15
By hour	Daytime: 0600-1800	0
	Evening: 1800-2400	+5
	Night time: 2400-0600	+10
By area ²	Urban area	
	exclusive residential area, green area	0
	general residential area, semiresidential area	-5
	commercial area, semi-industrial area	-15
	general industrial area, exclusive industrial area	-20
	Forest preservation area, natural environment preservation area, tour/recreation area, residential sector in the village area	0
	Whole sector in the village area except residential sector, aquatic resources preservation area, cultivation area, development promotion area, reserved area, unspecified area	+20
	Industrial area	-20
	Area within 50 m from the border of general hospital, defined by the Medical Law, and school, defined by the Education Law	0

NOTES:

1. Concerned period is 8 hours (h) in daytime, 4 h in the evening, 2 h in nighttime.
2. Area classification is based on the Land Use and Management Law; classification of urban area is based on the Urban Planning Law.

Appendix 5-5 (continued)

2. Vibration: final vibration level after calibration according to the following table must be 60dB(V) or less.

Category	Description	Calibration Coefficient
Percentage of noise duration to the period concerned ¹	50% or more	0
	25% or more, and less than 50%	-5
	less than 25%	-10
By hour	Daytime: 0600-2200	0
	Evening: 1800-2400	+5
	Night time: 2400-0600	+5
By area ²	Urban area	
	exclusive residential area, green area	0
	general residential area, semiresidential area	-5
	commercial area, semi-industrial area	-10
	general industrial area, exclusive industrial area	-15
	Forest preservation area, natural environment preservation area, tour/recreation area, residential sector in the village area	0
	Whole sector in the village area except residential sector, aquatic resources preservation area, cultivation area, development promotion area, reserved area, Unspecified area	-5
	Industrial area	-15
	Area within 50 m from the border of general hospital, defined by the Medical Law, and school, defined by the Education Law	0

NOTES:

1. Concerned period is 8 h in daytime, 4 h in the evening, 2 h in nighttime.

2. Area classification is based on the Land Use and Management Law; classification of urban area is based on the Urban Planning Law.

Appendix 5-6

Automobile Noise Standard

Type of Vehicle	Muffler Noise (dB(A))		Horn Noise (dB(C)) after 2 February 1991
	2 February 1991 to 31 December 1995	after 1 January 1996	
Light Vehicle	≤105	≤100	115
Passenger Vehicle	≤105	≤100	
Small Cargo Vehicle	≤105	≤100	
Heavy Vehicle	≤110	≤105	
Auto Bike	≤115	≤110	

Appendix 5-7

Checking Items and Methods for Self-Monitoring Records

Types of Facility	Check Item	Check Frequency
Facility in the industrial area defined in the Land Use and Management Law	noise	1 or more/yr
Facility in the general industrial area and exclusive industrial area defined in the Urban Planning Law	noise	1 or more/yr
Facility in other area	noise	2 or more/yr

(NOTE: Self-monitoring process may be exempt at the facility that is exempt from building a prevention facility.)

INSTALLATION:	COMPLIANCE CATEGORY: Environmental Noise Management Republic of Korea	DATE:	REVIEWER(S):
STATUS NA C RMA	REVIEWER COMMENTS:		

(1) Directorate of Engineering and Housing (DEH) (2) Environmental Coordinator (EC) (6) Director of Logistics (DOL) (8) Transportation/Maintenance Officer (DOL) (9) Chief of Operations and Maintenance (O&M) (10) Range Control (DPTMSEC) (12) Director of Plans, Training, Mobilization, and Security (DPTMSEC) (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (22) Staff Judge Advocate (32) Directorate of Resource Management (DRM), Internal Control

SECTION 6

PESTICIDE MANAGEMENT

Section 6

PESTICIDE MANAGEMENT

A. Applicability

This protocol applies to all U.S. Armed Forces installations located in the Republic of Korea. Specifically, it addresses the issue of the use of agricultural pesticides.

B. National Laws and Regulations

These three measures form the basis for the regulation of pesticides used in agriculture. They provide for the publication of the types of pesticides to be used in agriculture, their components, the testing of the effectiveness, hazardous effect, virulence, and remaining force of the pesticides, and for transportation regulations for pesticides. The labeling requirement is particularly important. It provides, on pesticide container labels, the descriptions of, the amount of the main and secondary ingredients, safety standards, a summary of possible hazards and special safety measures for inflammable pesticides, and the guaranteed period for effectiveness.

- *Agrochemicals Management Law* (Law No. 3322, 31 December 1980 as amended through Law No. 4109, 31 March 1989)
- *Presidential Decree to Implement the Agrochemicals Management Law* (Presidential Decree No. 10195 of 12 February 1981 as amended through Presidential Decree No. 12805 of 8 September 1989)
- *Ministry of Agriculture, Forestry, and Fishery Ordinance to Implement the Agrochemicals Management Law* (MOAFF Ordinance No. 822 of 26 March 1981 as amended through MOAFF Ordinance No. 1045 of 2 June 1990)

C. Provincial Laws and Regulations

At this time, specific provincial laws and regulations concerning pesticide use and management are not available.

D. Key Compliance Definition

- *Agrochemical* - any substance used to kill germs, insects, or weeds that are harmful to crops (including forest products) or animals and plants specified in the Ministry of Agriculture, Forestry, and Fishery Ordinance. It includes substances used to promote or suppress the growth of crops or to boost its effect.

PESTICIDE MANAGEMENT PROTOCOL GUIDANCE FOR WORKSHEET USERS

	REFER TO WORKSHEET ITEMS:	CONTACT THESE PERSONS OR GROUPS: (*)
All Installations	6-1 through 6-5	(1)(2)(17)(22)(33)
Application	6-6	(2)(3)(4)(17)(33)
Disposal	6-7	(2)(17)(33)
Reporting Requirements	6-8	(2)(17)(33)

(*)CONTACT/LOCATION CODE:

- (1) Directorate of Engineering and Housing (DEH)
- (2) Environmental Coordinator (EC)
- (3) Preventive Medicine Officer
- (4) Safety and Health Officer
- (17) Entomology Shop (DEH)
- (22) Staff Judge Advocate
- (33) Golf Course Pesticide Shop

**COMPLIANCE CATEGORY:
PESTICIDE MANAGEMENT
Republic of Korea**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>ALL INSTALLATIONS</p> <p>6-1. Determine actions or changes since previous review of pesticides (GMP).</p> <p align="center">...</p> <p>6-2. Copies of all relevant Korean laws and regulations on pesticide management should be maintained at the installation (GMP).</p> <p align="center">...</p> <p>6-3. Only listed pesticides are allowed to be used in Korea (Agrochemicals Management Law, Article 5; MOAFF Ordinance to Implement the Agrochemicals Management Law, Article 3).</p> <p align="center">...</p> <p>6-4. The MOAFF, the Governor, or the head of the Plant Quarantine Station may inspect pesticides, records, and facilities of any commercial applicator (Agrochemicals Management Law, Article 19-1).</p> <p align="center">...</p>	<p>Obtain a copy of previous report and determine if noncompliance issues have been resolved. (1)(2)</p> <p align="center">...</p> <p>Determine if copies of the following regulations are maintained and kept current at the installation: (1)(2)(22)</p> <ul style="list-style-type: none"> - <i>Environmental Policy Fundamental Law</i> - <i>Presidential Decree to Implement the Environmental Policy Fundamental Law</i> - <i>Public Health Act</i> - <i>Agrochemicals Management Law</i> - <i>Presidential Decree to Implement the Agrochemicals Management Law</i> - <i>Ministry of Agriculture, Forestry, Fisheries (MOAFF) Ordinance to Implement the Agrochemicals Management Law.</i> <p align="center">...</p> <p>Verify that pesticides used by the installation have been announced by the MOAFF. (17)(33)</p> <p>(NOTE: Agrochemicals are listed in the following Public Notices:</p> <ul style="list-style-type: none"> - MOAFF Public Notice 3181 (Official Gazette No. 8776, 26 February 1981) - MOAFF Public Notice 3195 (Official Gazette No. 8834, 8 May 1981) - MOAFF Public Notice 82-21 (Official Gazette No. 9121, 23 April 1982) - MOAFF Public Notice 82-72 (Official Gazette No. 9322, 21 December 1982) - MOAFF Public Notice 83-17 (Official Gazette No. 9400, 26 March 1983) - MOAFF Public Notice 84-4 (Official Gazette No. 9647, 20 January 1984) - MOAFF Public Notice 84-20 (Official Gazette No. 9723, 20 April 1984) - MOAFF Public Notice 84-22 (Official Gazette No. 9735, 4 May 1984) - MOAFF Public Notice 84-33 (Official Gazette No. 9815, 10 August 1984) - MOAFF Public Notice 85-6 (Official Gazette No. 9957, 6 February 1985) - MOAFF Public Notice 85-16 (Official Gazette No. 10014, 15 April 1985) - MOAFF Public Notice 85-29 (Official Gazette No. 10060, 10 June 1985) - MOAFF Public Notice 86-8 (Official Gazette No. 10283, 8 March 1986) - MOAFF Public Notice 91-6 (Official Gazette No. 11767, 12 March 1991.) <p align="center">...</p> <p>Determine if the installation has been inspected by any Korean agency. (2)(17)(33)</p> <p>Review the results of that inspection. (2)(17)(33)</p> <p align="center">...</p>

(1) Directorate of Engineering and Housing (DEH) (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (4) Safety and Health Officer (17) Entomology Shop (DEH) (22) Staff Judge Advocate (33) Golf Course Pesticide Shop

**COMPLIANCE CATEGORY:
PESTICIDE MANAGEMENT
Republic of Korea**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>6-5. The MOAFF, the Governor, or the head of the Plant Quarantine Station may order commercial applicators to report on the current status of pesticide management. (Agrochemicals Management Law, Article 20).</p> <p align="center">...</p> <p>APPLICATION</p> <p>6-6. Pesticides shall be properly applied (Agrochemicals Management Law, Article 18; Presidential Decree to Implement the Agrochemicals Management Law, Article 15).</p> <p align="center">...</p>	<p>Determine if the installation has been ordered to report on the status of pesticide management or supplement the facility. (2)(17)(33)</p> <p>If so, verify that required records and reports are kept for 2 years (yr). (2)(17)(33)</p> <p align="center">...</p> <p>Verify that the safety standards announced in the Official Gazette are followed. (2)(3)(4)(17)(33)</p> <p>(NOTE: Safety standards for specific agrochemicals are found in:</p> <ul style="list-style-type: none"> - MOAFF Public Notice 82-22 (Official Gazette No. 9121, 23 April 1982) - MOAFF Public Notice 83-18 (Official Gazette No. 9400, 26 March 1983) - MOAFF Public Notice 84-21 (Official Gazette No. 9723, 20 April 1984) - MOAFF Public Notice 85-7 (Official Gazette No. 9957, 6 February 1985) - MOAFF Public Notice 85-17 (Official Gazette No. 10014, 15 April 1985) - MOAFF Public Notice 85-30 (Official Gazette No. 10060, 10 June 1985) - MOAFF Public Notice 86-9 (Official Gazette No. 10283, 8 March 1986) - MOAFF Public Notice 91-6 (Official Gazette No. 11767, 12 March 1991). <p align="center">...</p>

(1) Directorate of Engineering and Housing (DEH) (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (4) Safety and Health Officer (17) Entomology Shop (DEH) (22) Staff Judge Advocate (33) Golf Course Pesticide Shop

**COMPLIANCE CATEGORY:
PESTICIDE MANAGEMENT
Republic of Korea**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>DISPOSAL</p> <p>6-7. Pesticides shall be properly disposed of (MOAFF Ordinance to Implement the Agrochemicals Management Law, Article 18, Appendix 8).</p> <p align="center">...</p> <p>REPORTING REQUIREMENTS</p> <p>6-8. Commercial pesticide applicators are required to document specific information (MOAFF Ordinance to Implement the Agrochemicals Management Law, Article 21).</p>	<p>Verify that pesticides are disposed of in accordance with the Waste Management Law. (2)(17)(33)</p> <p>Verify that pesticides are disposed of in one of the following ways: (2)(17)(33)</p> <ul style="list-style-type: none"> - by the applicator and according to the Waste Management Law - in the presence of a pesticide inspection official in areas where the underground water may not be contaminated and where humans and cattle rarely inhabit. <p align="center">...</p> <p>Verify that commercial applicators document the amount of pesticide used according to pesticide type. (2)(17)(33)</p>

(1) Directorate of Engineering and Housing (DEH) (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (4) Safety and Health Officer (17) Entomology Shop (DEH) (22) Staff Judge Advocate (33) Golf Course Pesticide Shop

INSTALLATION:	COMPLIANCE CATEGORY: Pesticide Management Republic of Korea	DATE:	REVIEWER(S):
STATUS NA C RMA	REVIEWER COMMENTS:		

(1) Directorate of Engineering and Housing (DEH) (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (4) Safety and Health Officer (17) Entomology Shop (DEH) (22) Staff Judge Advocate (33) Golf Course Pesticide Shop

SECTION 7

PETROLEUM, OIL, AND LUBRICANT (POL) MANAGEMENT

Section 7

PETROLEUM, OIL, AND LUBRICANT (POL) MANAGEMENT

A. Applicability

This protocol applies to all U.S. Armed Forces installations located in the Republic of Korea. Specifically, it deals with the prevention of marine pollution resulting from oil spillages or dumping, and it addresses the proper management and disposal of waste oils.

B. National Laws and Regulations

This law deals with oil and petroleum substances pollution from improper discharges from certain ships. Specifically, it applies to marine pollution from ships or offshore facilities in the sea areas adjacent to the land of the Republic of Korea and in other sea areas as provided for by Presidential Decree. It also applies to marine pollution in the special pollution-controlled coastal areas.

- *Marine Pollution Prevention Act* (Law No. 3079 of 31 December 1977 as amended through Law No. 4053 of 31 December 1988)

As well as dealing with domestic and other types of special wastes, this law and its implementing regulations address the proper management and disposal of waste oils. The law and regulations use a classification system for waste. Waste oil is one of the items in the class of "special waste." As such, the destruction and landfilling of such waste must meet certain, more stringent requirements than those prescribed for domestic waste.

- *Waste Management Law* (Law No. 4363, wholly amended 8 March 1991)
- *Presidential Decree for the Implementation of the Waste Management Law* (Presidential Decree No. 13480, wholly amended 26 September 1991)
- *Decree of the Prime Minister to Implement the Waste Management Law* (Decree of the Prime Minister No. 397, wholly amended 13 December 1991)

C. Provincial Laws and Regulations

At this time, no specific provincial laws or regulations are available concerning POL management for the areas in which there are Armed Forces installations.

D. Key Compliance Definitions

- *Bilge* - an oily mixture accumulated at the bottom of a ship.
- *Offshore Facility* - a structure constructed in the sea areas or by connecting the sea areas and land as provided for by the Ordinance of the Ministry of Health and Social Affairs.
- *Oil* - crude oil and petroleum products (excluding petroleum gas), as prescribed by the Petroleum Business Act, and any oily mixture containing these oils (referred to as "oily mixtures").
- *Oil Discharged in Large Quantity* - oil discharged in a quantity greater than the standards prescribed in the Presidential Decree, or the discharged quantity is deemed likely to exceed the standards.
- *Oil Record Book* - a record book kept by the master of a ship, that contains information as described in the Joint Ordinance.
- *Oil Tanker* - a ship constructed primarily to carry petroleum and oil in bulk in its cargo spaces.
- *Pollution Control Manager* - the crewman designated by the master of a ship to assist the master in controlling the oil and waste discharged from his ship.
- *Sea Pollution Control Certificate* - a document certifying that the vessel containing sea pollution control equipment passed the regular inspection or the provisional navigation inspection.
- *Sea Pollution Control Equipment* - includes the following items: bilge discharge control devices; water ballast discharge control devices; separate ballast tank; cargo shed crude oil cleaning equipment; and other equipment designed and used for the purpose of preventing discharge of oil.
- *Ship* - a vessel of any type operating for navigation in the ocean.
- *Special Waste* - as used in the Waste Management Law and its implementing regulations, this phrase describes various nondomestic wastes that, by their nature, must be treated and disposed of in a more stringent manner than

domestic waste. Waste oil is one of the substances that comes under this heading. Therefore, regulations in the protocol that address the proper storage, destruction, and disposal of "special waste" will refer to, for purposes of this POL protocol, those items that are contained in the definition of "waste oil."

- *Vessel Subject to Inspection* - vessels that have sea pollution control equipment installed in them. There are four types:
 1. *Regular Inspection*: a precise inspection to be conducted when the owner desires to install, for the first time, the sea pollution control equipment in the vessel and to use it for navigation, or an inspection conducted at the expiration of the validity time (described in Article 14-9).
 2. *Interim Inspection*: a simple inspection to be conducted between a regular inspection and the following regular inspection, as prescribed by the Joint Ordinance
 3. *Extraordinary Inspection*: an inspection to be conducted at the time of replacement, remodeling, or repair of the vessel's sea pollution control equipment
 4. *Provisional Navigation inspection*: an inspection to be conducted when the owner desires to use temporarily the vessel for the navigation before the sea pollution control certificate is delivered.
- *Waste Oil* - unusable oil, including:
 - lubricants
 - mineral oils besides lubricants
 - animal and vegetable oils
 - tar pitches that are in a solid-state at room temperature
 - solvents
 - waste that includes waste oils of any of the above items.
- *Waste Oil Disposal Business* - a business that receives and disposes of waste oil by means of a disposal facility.
- *Waste Oil Disposal Facility* - the facilities for disposal of waste oil. Facilities on board a ship for the self-disposal of waste oil generated in a ship are excluded.

**POL MANAGEMENT PROTOCOL
GUIDANCE FOR WORKSHEET USERS**

	REFER TO WORKSHEET ITEMS:	CONTACT THESE PERSONS OR GROUPS: (*)
All Installations	7-1 and 7-2	(1)(2)(22)
Waste Oil	7-3 and 7-4	(1)(2)(6)(7)(18)(19)(23)

(*)CONTACT/LOCATION CODE:

- (1) Directorate of Engineering and Housing (DEH)
- (2) Environmental Coordinator (EC)
- (6) Director of Logistics (DOL)
- (7) Fuels Management Officer (DOL/DEH)
- (18) Transfer, Storage, and Disposal Facility (TSDF) Operators (DEH, DOL, DRMO)
- (19) Shop Activity Supervisor
- (22) Staff Judge Advocate
- (23) Defense and Reutilization Marketing Office (DRMO)

COMPLIANCE CATEGORY:
PETROLEUM, OIL, AND LUBRICANT (POL) MANAGEMENT
Republic of Korea

REGULATORY REQUIREMENTS	REVIEWER CHECKS:
<p>ALL INSTALLATIONS</p> <p>7-1. Determine actions or changes since previous review of POL management (GMP).</p> <p style="text-align: center;">...</p> <p>7-2. Copies of all relevant Korean laws and regulations on POL management should be maintained at the installation (GMP).</p> <p style="text-align: center;">...</p>	<p>Obtain a copy of previous report and determine if noncompliance issues have been resolved. (1)(2)</p> <p style="text-align: center;">...</p> <p>Determine if copies of the following laws and regulations are maintained and kept current at the installation: (2)(22)</p> <ul style="list-style-type: none"> - <i>Environmental Policy Fundamental Law.</i> - <i>Presidential Decree to Implement the Environmental Policy Fundamental Law.</i> - <i>Public Health Act.</i> - <i>Marine Pollution Prevention Act.</i> - <i>Waste Management Law.</i> - <i>Presidential Decree for the Implementation of the Waste Management Law.</i> - <i>Decree of the Prime Minister to Implement the Waste Management Law.</i> <p style="text-align: center;">...</p>
<p>WASTE OIL</p> <p>7-3. Installations that produce or dispose of waste oil are required to meet the requirements for special wastes (Decree of the Prime Minister to Implement the Waste Management Law, Article 2).</p> <p>(NOTE: Protocol questions addressing special waste are located in the hazardous waste management section.)</p> <p style="text-align: center;">...</p> <p>7-4. Installations that burn waste oils are required to meet certain disposal requirements (Decree of the Prime Minister to Implement the Waste Management Law, Article 31).</p>	<p>Verify that the installation is in compliance with the appropriate regulations and laws applicable to industrial wastes. (1)(2)(6)(7)(18)(19)(23)</p> <p style="text-align: center;">...</p> <p>Verify that after burning waste oil, ashes are landfilled. (1)(2)(6)(7)(18)(19)(23)</p> <p>Verify that waste oil with high water content is burned after separating water from oil. (1)(2)(6)</p> <p>Verify that the oil content in water after separation is less than 5 milligrams (mg)/liter (L). (1)(2)(6)</p>

(1) Directorate of Engineering and Housing (DEH) (2) Environmental Coordinator (EC) (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (18) Transfer, Storage, and Disposal Facility (TSDF) Operators (DEH, DOL, DRMO) (19) Shop Activity Supervisor (22) Staff Judge Advocate (23) Defense and Reutilization Marketing Office (DRMO)

INSTALLATION:	COMPLIANCE CATEGORY: Petroleum, Oil, and Lubricant (POL) Management Republic of Korea	DATE:	REVIEWER(S):
STATUS NA C RMA	REVIEWER COMMENTS:		

(1) Directorate of Engineering and Housing (DEH) (2) Environmental Coordinator (EC) (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (18) Transfer, Storage, and Disposal Facilities (TSDF) Operators (DEH, DOL, DRMO) (19) Ship Activity Supervisor (22) Staff Judge Advocate (23) Defense and Reutilization Marketing Office (DRMO)

SECTION 8

SOLID WASTE MANAGEMENT

Section 8

SOLID WASTE MANAGEMENT

A. Applicability

This protocol applies to all U.S. Armed Forces installations, located in the Republic of Korea, that produce and/or dispose of domestic wastes. Special wastes (which include many industrial and hazardous wastes) are discussed in the hazardous waste protocol.

B. National Laws and Regulations

These laws and its implementing regulations are designed to "preserve the natural and human environment through the appropriate disposal of waste," thereby improving public health and preserving a clean environment.

- *Waste Management Law* (Law No. 4363, wholly amended 8 March 1991)
- *Presidential Decree for the Implementation of the Waste Management Law* (Presidential Decree No. 13480, wholly amended 26 September 1991)
- *Decree of the Prime Minister to Implement the Waste Management Law* (Decree of the Prime Minister, No. 397, wholly amended 13 December 1991)

C. Provincial Laws and Regulations

Specific provincial laws and regulations are not covered by this manual. The following duties or options are those that must or may be performed by governors or mayors:

Domestic Waste Disposal Facilities - the Mayor of the special city of Seoul, the mayors of "direct control" cities (Busan, Inchon, Kwangju, Daejun, Daegu), mayors of other cities, and country heads are required to construct domestic waste disposal facilities, operate and maintain them efficiently, and improve operation methods. They are also required to make efforts to explain the importance of a clean environment to the public.

D. Key Compliance Definitions

- *Areas Prohibited from Open Waste Dumping* - includes the following areas:
 1. coastal areas within 10,000 meters (m) of harbor regions, as defined by the Coastal and Harbor Law
 2. areas so designated and declared by the Ministry of Environment Administration, through coordination with the National Fisheries Administration, to produce or preserve marine products
 3. areas such as roadside, railroad track beds, or resort areas so designated and declared by the Ministry of Environment Administration, through coordination with the Minister of Construction or the Minister of Transportation
 4. designated cultural properties and corresponding protected areas, according to the Cultural Properties Protection Law
 5. areas so designated and declared by the Ministry of Environment Administration, through coordination with the Minister of Agriculture and Fisheries, to preserve the quality of agricultural water.
- *Disposal* - intermediate treatment that incinerates, neutralizes, or solidifies wastes, and final treatment that landfills or discharges wastes to the coast.
- *Domestic Sewage Treatment Facility* - any of the following facilities are considered to be domestic sewage treatment facilities:
 - an extended aeration process facility with pretreatment facilities, extended aeration tank, settling tank, disinfection chamber, and other auxiliary components
 - a standard activated sludge facility with pretreatment facilities, activated sludge tank, settling tank, disinfection chamber, and other auxiliary components
 - a contact oxidation process with pretreatment facilities, contact oxidation tank, settling tank, disinfection chamber, and other auxiliary components
 - a trickling filter with pretreatment facilities, settling tank, disinfection chamber, and other auxiliary components
 - a contact stabilization process with pretreatment facilities, contact tank, sludge reaeration tank, settling tank, disinfection chamber, and other auxiliary components
 - a rotating biological contactor (RBC) process with pretreatment facilities, rotating disk contactor, settling tank, disinfection chamber, and other auxiliary components
 - a swing microbic contact process, separation contact aeration process, and anaerobic filtering contact aeration process.
- *Domestic Waste* - waste such as refuse and human excreta but not including industrial waste.

- *Domestic Waste Disposal Facility* - any of the following facilities are considered domestic waste disposal facilities:
 1. a landfill facility
 2. an incinerating facility
 3. a waste compressing facility, a waste crushing facility, or an intermediate facility that treats domestic waste in order to facilitate transportation
 4. a facility of which the main function is to reuse domestic waste by classifying or treating the waste so that it may be used as farmyard manure, fodder, fuel, etc.
- *Large Volume Waste Generator* - anyone who produces more than 300 kilograms (kg) of refuse daily. This facility is responsible for its own refuse.
- *Master Plan* - a plan on waste disposal developed by mayors or governors in the areas of their jurisdiction in accordance with the guidelines set by the Environment Administration.
- *Mayor or Governor* - the Mayor of the Special City of Seoul, mayors of the direct control cities (Busan, Incheon, Kwangju, Daejeon, Daegu), and governors of the provinces.
- *Recycling* - remaking or reusing of wastes.
- *Refuse Disposal Facility* - refers to one of the following facilities that dispose of refuse:
 1. a landfill facility with an area of 3300 square meters (m^2) or more, or with a landfill capacity of 10,000 cubic meters (m^3) or more
 2. an incineration facility with a capacity of 5 tons per day or more
 3. a recycle and separation facility (including a Refuse Derived Fuel (RDF) facility) with a capacity of 5 tons per day or more
 4. a composting facility with a capacity of 5 tons per day or more
 5. a pretreatment facility that prepares material for landfill or incineration, and has a capacity of 5 tons per day or more, to be announced by the Environment Administration.
- *Sewage (or Domestic Sewage)* - a mixture of liquid and solid materials discharged from flush toilets, bathrooms, kitchens, etc., that may not be used for domestic and industrial purposes without treatment.
- *Specially Clean Areas* - the special city of Seoul, the cities under the direct control of the national government, and other cities.

- *Waste* - substances unnecessary for residential, commercial, and industrial activities, such as refuse, ash, sludge, human excreta, waste oil, waste acid and alkali, and carcasses.

SOLID WASTE MANAGEMENT PROTOCOL GUIDANCE FOR WORKSHEET USERS

	REFER TO WORKSHEET ITEMS:	CONTACT THESE PERSONS OR GROUPS: (*)
All Installations	8-1 and 8-2	(1)(2)(22)
Permits	8-3 and 8-4	(1)(2)
Recordkeeping	8-5	(2)(6)
Collection and Transportation	8-6 and 8-7	(2)(6)(15)(16)
Disposal	8-8 through 8-10	(2)(6)
Large Volume Generators	8-11	(2)(6)(9)(15)(16)(19)(23)
Domestic Waste Storage Containers	8-12	(2)(6)
Construction Standards	8-13 through 8-15	(1)(2)(6)(9)
Operation and Maintenance	8-16	(2)(6)
Waste Recycling	8-17	(1)(2)(6)

(*)CONTACT/LOCATION CODE:

- (1) Directorate of Engineering and Housing (DEH)
- (2) Environmental Coordinator (EC)
- (6) Director of Logistics (DOL)
- (9) Chief of Operations and Maintenance (O&M)
- (15) Land Management Officer (DEH)
- (16) Building and Grounds Division (DEH)
- (19) Shop Activity Supervisor
- (20) Director of Contracting (DOC)
- (22) Staff Judge Advocate
- (23) Defense and Reutilization Marketing Office (DRMO)

**COMPLIANCE CATEGORY:
SOLID WASTE MANAGEMENT
Republic of Korea**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>ALL INSTALLATIONS</p> <p>8-1. Determine actions or changes since previous review of solid waste management (GMP).</p> <p style="text-align: center;">...</p> <p>8-2. Copies of all relevant Korean laws and regulations on solid waste management should be maintained at the installation (GMP).</p> <p style="text-align: center;">...</p> <p>PERMITS</p> <p>8-3. A permit is required to operate a waste disposal facility (Decree of the Prime Minister to Implement the Waste Management Law, Article 12; Waste Management Law, Article 17).</p> <p style="text-align: center;">...</p> <p>8-4. Installations are required to obtain a permit prior to the construction of a waste disposal facility (Decree of the Prime Minister to Implement the Waste Management Law, Article 16; Waste Management Law, Article 20).</p> <p style="text-align: center;">...</p>	<p>Obtain a copy of previous report and determine if noncompliance issues have been resolved. (1)(2)</p> <p style="text-align: center;">...</p> <p>Determine if copies of the following laws and regulations are maintained and kept current at the installation: (1)(2)(22)</p> <ul style="list-style-type: none"> - <i>Environmental Policy Fundamental Law.</i> - <i>Presidential Decree to Implement the Environmental Policy Fundamental Law.</i> - <i>Public Health Act.</i> - <i>Waste Management Law.</i> - <i>Presidential Decree for the Implementation of the Waste Management Law.</i> - <i>Decree of the Prime Minister to Implement the Waste Management Law.</i> - <i>Sewage, Night Soil, and Livestock Wastewater Treatment Law.</i> - <i>Presidential Decree for the Implementation of the Sewage, Night Soil, and Livestock Wastewater Treatment Law.</i> - <i>Decree of the Prime Minister to Implement the Sewage, Night Soil, and Livestock Wastewater Treatment Law.</i> <p style="text-align: center;">...</p> <p>Determine if the installation operates a waste disposal facility. (1)(2)</p> <p>Verify that a permit has been obtained. (1)(2)</p> <p style="text-align: center;">...</p> <p>Determine if the installation is constructing a refuse disposal facility. (1)(2)(6)</p> <p>Verify that a permit has been obtained. (1)(2)(6)</p> <p style="text-align: center;">...</p>

(1) Directorate of Engineering and Housing (DEH) (2) Environmental Coordinator (EC) (6) Director of Logistics (DOL) (9) Chief of Operations and Maintenance (O&M) (15) Land Management Officer (DEH) (16) Building and Grounds Division (DEH) (19) Shop Activity Supervisor (20) Director of Contracting (DOC) (22) Staff Judge Advocate (23) Defense and Reutilization Marketing Office (DRMO)

**COMPLIANCE CATEGORY:
SOLID WASTE MANAGEMENT
Republic of Korea**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>RECORDKEEPING</p> <p>8-5. Waste disposal facilities are required to keep a logbook (Decree of the Prime Minister to Implement the Waste Management Law, Article 64).</p> <p align="center">...</p> <p>COLLECTION AND TRANSPORTATION</p> <p>8-6. Collection and transportation of domestic wastes must meet specific requirements (Decree of the Prime Minister to Implement the Waste Management Law, Article 7).</p> <p align="center">...</p> <p>8-7. Vehicles used for the collection and transportation of domestic wastes must meet certain standards (Decree of the Prime Minister to Implement the Waste Management Law, Article 7).</p> <p align="center">...</p>	<p>Verify that a logbook of waste disposal activities is maintained. (2)(6)</p> <p align="center">...</p> <p>Verify that domestic wastes are collected at regular intervals. (2)(6)(15)(16)</p> <p align="center">...</p> <p>Verify that vehicles are equipped with mechanical devices to lift and unload domestic waste containers. (2)(6)</p> <p>Verify that vehicles are cleaned and maintained to prevent waste from scattering, leaking, and emitting odors. (2)(6)</p> <p>Verify that vehicles transporting waste across cities and/or counties have sealed containers. (2)(6)</p> <p align="center">...</p>

(1) Directorate of Engineering and Housing (DEH) (2) Environmental Coordinator (EC) (6) Director of Logistics (DOL) (9) Chief of Operations and Maintenance (O&M) (15) Land Management Officer (DEH) (16) Building and Grounds Division (DEH) (19) Shop Activity Supervisor (20) Director of Contracting (DOC) (22) Staff Judge Advocate (23) Defense and Reutilization Marketing Office (DRMO)

**COMPLIANCE CATEGORY:
SOLID WASTE MANAGEMENT
Republic of Korea**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>DISPOSAL</p> <p>8-8. Disposal of domestic waste must meet certain general requirements (Decree of the Prime Minister to Implement the Waste Management Law, Article 7).</p> <p>...</p> <p>8-9. Domestic waste landfill facilities must meet specific standards (Decree of the Prime Minister to Implement the Waste Management Law, Article 7).</p> <p>...</p> <p>8-10. Domestic waste incinerating facilities must meet specific operating requirements (Decree of the Prime Minister to Implement the Waste Management Law, Article 7).</p> <p>...</p> <p>LARGE VOLUME GENERATORS</p> <p>8-11. Large volume generators of domestic waste must meet specific requirements for collection and transportation (Decree of the Prime Minister to Implement the Waste Management Law, Article 9; Presidential Decree for the Implementation of the Waste Management Law, Article 7; Waste Management Law, Article 14).</p> <p>...</p>	<p>Verify that domestic wastes are prevented from scattering during disposal. (2)(6)</p> <p>Verify that domestic waste disposal facilities are sanitized to prevent the breeding of rats, flies, mosquitos, or other vermin. (2)(6)</p> <p>...</p> <p>Verify that signs are posted at landfills indicating what types of waste may be disposed of at the facility. (2)(6)</p> <p>Verify that a cover (of soil or similar material) at least 15 centimeters (cm) thick is placed on the landfill every day. (2)(6)</p> <p>Verify that a cover of 30 cm or more is placed on the landfill if activities are suspended for a week or more. (2)(6)</p> <p>...</p> <p>Verify that only domestic waste is combusted at the incinerating facility. (2)(6)</p> <p>Verify that the incinerating facility is maintained to prevent the emission of dust and odors. (2)(6)</p> <p>...</p> <p>Verify that a large volume generator report is submitted to the Mayor within 1 month (mo) of the start of waste generation. (2)(6)(9)(15)(16)(19)(23)</p> <p>Verify that recyclable, combustible, and noncombustible domestic wastes are separated from each other. (2)(6)(9)</p> <p>Verify that transportation equipment is covered and prevents spills and odors. (2)(6)(9)</p> <p>Verify that transportation equipment is cleaned regularly. (2)(6)(9)</p> <p>Verify that the disposal requirements for domestic waste generators (see Disposal section of this protocol) are met. (2)(6)(9)</p> <p>...</p>

(1) Directorate of Engineering and Housing (DEH) (2) Environmental Coordinator (EC) (6) Director of Logistics (DOL) (9) Chief of Operations and Maintenance (O&M) (15) Land Management Officer (DEH) (16) Building and Grounds Division (DEH) (19) Shop Activity Supervisor (20) Director of Contracting (DOC) (22) Staff Judge Advocate (23) Defense and Reutilization Marketing Office (DRMO)

**COMPLIANCE CATEGORY:
SOLID WASTE MANAGEMENT
Republic of Korea**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>DOMESTIC WASTE STORAGE CONTAINERS</p> <p>8-12. Containers used for the storage of domestic waste must meet specific standards (Decree of the Prime Minister to Implement the Waste Management Law, Article 10; Waste Management Law, Article 16).</p> <p>...</p> <p>CONSTRUCTION STANDARDS</p> <p>8-13. Landfills are required to meet specific construction standards (Decree of the Prime Minister to Implement the Waste Management Law, Article 15).</p> <p>...</p> <p>8-14. Incineration facilities are required to meet certain construction standards (Decree of the Prime Minister to Implement the Waste Management Law, Article 15).</p> <p>...</p> <p>8-15. Compressing, crushing, and composting facilities are required to meet certain construction standards (Decree of the Prime Minister to Implement the Waste Management Law, Article 15).</p> <p>...</p>	<p>Verify that containers meet the following criteria: (2)(6)</p> <ul style="list-style-type: none"> - they are made of durable material such as metal or plastic - they are convenient for the collection and transportation of waste - they are covered - they have a capacity large enough to contain wastes. <p>(NOTE: These standards do not apply to domestic waste for recycling.)</p> <p>Verify that recyclable, combustible, and non-combustible domestic wastes are stored in separate containers. (2)(6)</p> <p>...</p> <p>Verify that the landfill: (2)(6)</p> <ul style="list-style-type: none"> - is surrounded by a fence - has signs displayed - has four or more monitoring wells to check for underground water contamination - has waterproofing material covering its sides and floor - has a leachate collecting well - does not allow stormwater to flow in. <p>...</p> <p>Verify that each incinerating facility: (1)(2)(9)</p> <ul style="list-style-type: none"> - can endure its own weight, live load, and other loads - can fully resist heat, chemicals, humidity, gas, impact, and other effects generated in the treatment process - is furnished with the necessary equipment to treat water polluting and air polluting substances generated from incineration - has a floor lined by cement or asphalt to prevent water penetration. <p>...</p> <p>Verify that each facility is furnished with the necessary equipment to prevent waste, dust, and odor emission. (1)(2)(9)</p> <p>Verify that each facility is furnished with equipment to treat water and air polluting substances generated from the treatment process. (1)(2)(9)</p> <p>Verify that the floor of the facility is lined with cement or asphalt to prevent water penetration. (1)(2)(9)</p> <p>...</p>

(1) Directorate of Engineering and Housing (DEH) (2) Environmental Coordinator (EC) (6) Director of Logistics (DOL) (9) Chief of Operations and Maintenance (O&M) (15) Land Management Officer (DEH) (16) Building and Grounds Division (DEH) (19) Shop Activity Supervisor (20) Director of Contracting (DOC) (22) Staff Judge Advocate (23) Defense and Reutilization Marketing Office (DRMO)

**COMPLIANCE CATEGORY:
SOLID WASTE MANAGEMENT
Republic of Korea**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>OPERATION AND MAINTENANCE</p> <p>8-16. Installations that operate waste disposal facilities are required to meet certain operation and maintenance standards (Decree of the Prime Minister to Implement the Waste Management Law, Article 15).</p> <p style="text-align: center;">...</p>	<p>Verify that for landfills: (2)(6)</p> <ul style="list-style-type: none"> - monitoring devices for underground water contamination are inspected at least once a month - leachate collection facilities are checked at regular intervals - any gas generated is properly treated. <p>Verify that for incinerating facilities: (2)(6)</p> <ul style="list-style-type: none"> - safety and sanitary inspections are conducted at regular intervals - records for the density of discharge gas, operation state, etc. are maintained if the facility has a capacity of 50 tons or more per day. <p>Verify that for compressing, crushing, and composting facilities, each facility is furnished with the equipment necessary to prevent the scattering of dust and waste and the emission of odor and noise. (2)(6)</p> <p style="text-align: center;">...</p>
<p>WASTE RECYCLING</p> <p>8-17. Installations that recycle domestic waste are required to obtain a permit (Decree of the Prime Minister to Implement the Waste Management Law, Article 42).</p>	<p>Verify that a permit has been obtained. (1)(2)(6)</p> <p>(NOTE: A report including the use and methods for recycling, the volume, the plan to collect, transport, and store, and the plan to dispose of domestic waste generated from recycling must be submitted to the Mayor before a permit will be issued.)</p>

(1) Directorate of Engineering and Housing (DEH) (2) Environmental Coordinator (EC) (6) Director of Logistics (DOL) (9) Chief of Operations and Maintenance (O&M) (15) Land Management Officer (DEH) (16) Building and Grounds Division (DEH) (19) Shop Activity Supervisor (20) Director of Contracting (DOC) (22) Staff Judge Advocate (23) Defense and Reutilization Marketing Office (DRMO)

INSTALLATION:	COMPLIANCE CATEGORY: Solid Waste Management Republic of Korea	DATE:	REVIEWER(S):
STATUS NA C RMA	REVIEWER COMMENTS:		

(1) Directorate of Engineering and Housing (DEH) (2) Environmental Coordinator (EC) (6) Director of Logistics (DOL) (9) Chief of Operations and Maintenance (O&M) (15) Land Management Officer (DEH) (16) Building and Grounds Division (DEH) (19) Shop Activity Supervisor (20) Director of Contracting (DOC) (22) Staff Judge Advocate (23) Defense and Reutilization Marketing Office (DRMO)

SECTION 9

SPECIAL PROGRAMS MANAGEMENT

Section 9

SPECIAL PROGRAMS MANAGEMENT

A. Applicability

This protocol applies to U.S. Armed Forces installations in the Republic of Korea that deal with polychlorinated biphenyls (PCBs) and asbestos.

B. National Laws and Regulations

Although primarily concerned with solid waste and wastewater treatment, this law and its implementing regulations do contain certain provisions for the acceptable storage, collection, transportation, and disposal of the PCB-containing waste and for the disposal of asbestos.

PCBs and asbestos are considered special wastes. In addition to this protocol, consult the hazardous waste protocol, which covers general standards for the collection, transportation, and disposal of special wastes.

- *Waste Management Law* (Law No. 4363, wholly amended 8 March 1991)
- *Presidential Decree to Implement the Waste Management Law* (Presidential Decree No. 13480, wholly amended 26 September 1991)
- *Decree of the Prime Minister to Implement the Waste Management Law* (Decree of the Prime Minister No. 397, wholly amended 13 December 1991)

C. Provincial Laws and Regulations

At the present time, specific provincial laws and regulations concerning PCBs and asbestos are unavailable.

D. Key Compliance Definitions

- *Large Volume Waste Generator* - anyone who, as a result of his activities in a "Specially Clean Area," produces more than 300 kilograms (kg) of refuse daily. This facility is responsible for its own refuse.
- *Mayor or Governor* - the Mayor of the Special City of Seoul, mayors of the direct control cities (Busan, Incheon, Kwangju, Daejeon, Daegu), and governors of the provinces.
- *PCB and PCP Waste* - waste polychlorinated biphenyls (PCBs) or pentachlorophenyl (PCP) and their derivatives.
- *Special Waste* - sludges, residues, waste oil, waste acid and alkali, waste synthetic resins, waste rubber, and other like items produced as a result of industrial activities.
- *Special Waste Disposal Facility* - a facility where industrial wastes are land-filled, incinerated, destroyed, neutralized, or cement solidified. In particular, this refers to any one or a combination of the following facilities:
 1. a landfill facility with an area of 1650 square meters (m^2) or more or with a landfill capacity of 5000 cubic meters (m^3) or more
 2. an incineration facility with a capacity of 1 ton per day or more
 3. an aerobic or anaerobic composting facility with a capacity of 1 ton per day or more
 4. a neutralization facility with a disposal capacity of 1 ton per day or more
 5. a melting facility with a disposal capacity of 1 ton per day or more
 6. an oil and water separation facility with a disposal capacity of 1 ton per day or more
 7. a cement solidification facility with a capacity of 1 ton per day or more
 8. any facility that the Environment Administration announces to be equivalent to those listed above.
- *Waste* - substances unnecessary for residential, commercial, and industrial activities, such as refuse, ash, sludge, human excreta, waste oil, waste acid and alkali, and carcasses.

SPECIAL PROGRAMS MANAGEMENT PROTOCOL GUIDANCE FOR WORKSHEET USERS

	REFER TO WORKSHEET ITEMS:	CONTACT THESE PERSONS OR GROUPS: (*)
All installations	9-1 and 9-2	(1)(2)
Asbestos	9-3 through 9-5	(2)(18)(23)(24)(25)
PCBs	9-6 through 9-8	(2)(18)(23)(24)(25)

(*)CONTACT/LOCATION CODE:

- (1) Directorate of Engineering and Housing (DEH)
- (2) Environmental Coordinator (EC)
- (18) Transfer, Storage, and Disposal Facility (TSDF) Operators (DEH, DOL, DRMO)
- (23) Defense and Reutilization Marketing Office (DRMO)
- (24) Utilities Division (Interior Electric Shop)
- (25) Utilities Division (Exterior Electric Shop)

**COMPLIANCE CATEGORY:
SPECIAL PROGRAMS MANAGEMENT
Republic of Korea**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>ALL INSTALLATIONS</p> <p>9-1. Determine actions or changes since previous review of special programs management (GMP).</p> <p style="text-align: center;">...</p> <p>9-2. Copies of all relevant laws and regulations on special programs management should be maintained at the installation (GMP).</p> <p style="text-align: center;">...</p> <p>ASBESTOS</p> <p>9-3. Installations that collect and transport waste asbestos in volumes over 100 kg/month (mo) are required to submit a report to the local Environment Administration (Decree of the Prime Minister to Implement the Waste Management Law, Article 36).</p> <p style="text-align: center;">...</p> <p>9-4. Installations that collect and transport waste asbestos are required to contain the asbestos (Decree of the Prime Minister to Implement the Waste Management Law, Article 30).</p>	<p>Obtain a copy of previous report and determine if noncompliance issues have been resolved. (1)(2)</p> <p style="text-align: center;">...</p> <p>Determine whether copies of the following laws and regulations are maintained and kept current at the installation: (1)(2)</p> <ul style="list-style-type: none"> - <i>Environmental Policy Fundamental Law.</i> - <i>Presidential Decree to Implement the Environmental Policy Fundamental Law.</i> - <i>Public Health Act.</i> - <i>Waste Management Law.</i> - <i>Presidential Decree for the Implementation of the Waste Management Law.</i> - <i>Decree of the Prime Minister to Implement the Waste Management Law.</i> <p style="text-align: center;">...</p> <p>Determine if the installation collects and transports waste asbestos in volumes over 100 kg/mo. (2)(18)(23)(24)(25)</p> <p>Verify that a report is submitted to the local Environment Administration. (2)(18)</p> <p style="text-align: center;">...</p> <p>Verify that the waste asbestos are contained in polyethylene bags to prevent scattering. (2)(18)(23)(24)(25)</p>

(1) Directorate of Engineering and Housing (DEH) (2) Environmental Coordinator (EC) (18) Transfer, Storage, and Disposal Facility (TSDF) Operators (DEH, DOL, DRMO) (23) Defense and Reutilization Marketing Office (DRMO) (24) Utilities Division (Interior Electric Shop) (25) Utilities Division (Exterior Electric Shop)

COMPLIANCE CATEGORY: SPECIAL PROGRAMS MANAGEMENT Republic of Korea	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>9-5. Installations that dispose of waste asbestos are required to do so in a specific manner (Decree of the Prime Minister to Implement the Waste Management Law, Article 31).</p> <p>PCBs</p> <p>9-6. Installations that collect and transport waste containing PCB are required to submit a report to the local Environment Administration (Decree of the Prime Minister to Implement the Waste Management Law, Article 36).</p> <p>...</p> <p>9-7. Installations that collect and transport PCB-containing waste must follow specific standards (Decree of the Prime Minister to Implement the Waste Management Law, Article 30).</p> <p>...</p> <p>9-8. Installations that dispose of PCB waste must do so in a specific manner (Decree of the Prime Minister to Implement the Waste Management Law, Article 31).</p>	<p>Verify that prior to landfilling, waste asbestos are contained in polyethylene bags. (2)(18)(23)(24)(25)</p> <p>Determine if the installation collects and transports waste containing PCBs. (2)(18)(23)(24)(25)</p> <p>Verify that a report is submitted to the local Environment Administration. (2)(18)</p> <p>...</p> <p>Verify that PCB-containing waste is not stored for more than 90 days when the monthly total is over 1000 kg. (2)(18)(23)(24)(25)</p> <p>(NOTE: When the monthly total is less than 1000 kg, it can be stored for 180 days.)</p> <p>...</p> <p>Determine if the installation disposes of PCB waste. (2)(18)(23)(24)(25)</p> <p>Verify that PCB waste is disposed of by high-temperature destruction (over 1100 °C). (2)(18)</p>

9 - 6

INSTALLATION:	COMPLIANCE CATEGORY: Special Programs Management Republic of Korea		DATE:	REVIEWER(S):
STATUS NA C RMA	REVIEWER COMMENTS:			

(1) Directorate of Engineering and Housing (DEH) (2) Environmental Coordinator (EC) (18) TSDF Operators (DEH, DOL, DRMO) (23) Defense and Reutilization Marketing Office (DRMO) (24) Utilities Division (Interior Electric Shop) (25) Utilities Division (Exterior Electric Shop)

SECTION 10

WATER QUALITY MANAGEMENT

Section 10

WATER QUALITY MANAGEMENT

A. Applicability

This protocol applies to all U.S. Armed Forces installations in the Republic of Korea. Because of the emphasis in Korea on wastewater issues, this protocol contains direct provisions for analysis of an installation's compliance with drinking water standards.

B. National Laws and Regulations

These laws and regulations are primarily concerned with the discharge of pollutants into Korea's waters. The laws and regulations give authority for the establishment of a monitoring network to measure the level of environmental water pollution on a regular basis; provide for the expropriation of lands to set up this monitoring network; set permissible discharge standards of water-polluting substances generated from "wastewater discharge facilities"; provide a mechanism for the Administration of Environment to set more stringent standards for "Special Counter Measure Areas" (where water pollution is especially concentrated); and set out standards for the proper treatment of wastewater.

- *Water Environment Preservation Law* (Law No. 4260 of 1 August 1990)
- *Presidential Decree to Implement the Water Environment Preservation Law* (Presidential Decree No. 13258, 28 January 1991)
- *Decree of the Prime Minister to Implement the Water Environment Preservation Law* (Decree of the Prime Minister No. 376, 2 February 1991)

C. Provincial Laws and Regulations

Monitoring/Measuring - specified mayors or governors may establish a monitoring network and measure the level of environmental pollution on a regular basis to examine the state of water pollution in his or her area of jurisdiction.

Prevention of Pollution of Farmlands and Forest - when deemed necessary for the prevention of pollution of farmlands and forest from specified water-polluting hazardous materials, the Mayor or Governor, with appropriate jurisdiction over the area, may set forth the water quality standards for the water flowing into the farmland or forest or issue an order of soil-covering or soil-removal in accordance with the appropriate presidential decree.

Property Expropriation - a mayor or governor may expropriate or use those lands, structures and other assets fixed on the land that are required for establishing the monitoring network of the Water Environment Preservation Law.

D. Key Compliance Definitions

- *Businessman* - any person who has obtained permission to establish or modify a discharge facility.
- *Environment* - the natural environment in its natural state and the living environment necessary for the protection of property and the growth of animals and plants, which are closely related to the daily living of human beings.
- *Environment Standards* - those standards promulgated under authority of Article 10 of the Environment Policy Fundamental Law.
- *Improvement Order* - an order by the Minister of Environment Administration that orders a businessman to establish, improve, replace, or take any other necessary measures to solve the problem of discharging polluting substances in excess of the amount listed in a discharge facility's or prevention facility's permissible discharge standards.
- *Joint Wastewater Final Treatment Facility* - a facility that may be built in an area where the maintenance of permissible discharge standards is deemed difficult or where water quality preservation is especially necessary. A businessman may be required to pay for all or part of the building and operation costs of this facility.
- *Mayor or Governor* - the Mayor of the Special City of Seoul, mayors of direct control cities (Busan, Inchan, Kwangju, Daejun, Daegu), and governors of the provinces.
- *Permissible Discharge Standards* - defined according to the size of the plant.
- *Potable Water Source Protection Area* - areas defined and provided for in Article 3 of the Waterworks Law.

- *Prevention Facility Businessman* - a person whose prevention facility business is registered in accordance with Article 39 of the *Water Environment Preservation Law*.
- *Public Waters* - waters for public use such as rivers, lakes, marshes, harbors, and coasts, and certain water channels connected to them. This includes underground public waters, agricultural public waters, sewage channels, and canals.
- *Special Area to Control Water Quality of Lakes and Marshes* - areas designated by the Minister of Environment Administration as those that affect the water quality of lakes and marshes.
- *Special Counter Measure Areas (or 'Zones')* - areas prescribed in Article 22 of the *Environment Policy Fundamental Law*. In these areas, the Minister of Environment Administration may prescribe and impose more rigid permissible discharge standards for new discharge facilities than those standards prescribed for wastewater discharge facilities not in special countermeasures zones.
- *Special Lakes and Marshes Areas* - areas designated by the Minister of Environment Administration as those areas where the maintenance of the environment permissible standard is deemed difficult or likely to become difficult.
- *Specified Water-Polluting Hazardous Material* - water-polluting substances that are likely to become directly or indirectly harmful to the health or property of humans or to the growth of animals or plants. This includes copper and its compounds, lead and its compounds, arsenic and its compounds, mercury and its compounds, cyanide, compounds of organic phosphorous, compounds of hexavalent chromium, cadmium and its compounds, tetrachloroethylene, phenol, and PCB.
- *Synthetic Chemical Materials* - compounds produced by a chemical reaction of elements or compounds.
- *Wastewater* - water that cannot be used because of liquid or solid water-polluting substances mixed in the water; water which cannot be used as it is because of some liquid or solid waste mixed therein.
- *Water Pollutant Discharge Facilities* - facilities, machines, instruments, and the like that discharge polluting materials harmful to water (see Appendix 10-1). This does not include ships and marine facilities prescribed by Article 2 of the *Marine Pollution Prevention Law*.

The following are the types of wastewater discharge facilities regulated:

1. Type 1 Plant: plant discharging 3000 cubic meters (m^3) of wastewater or greater per day
2. Type 2 Plant: plant discharging 1000 to 3000 m^3 of wastewater per day
3. Type 3 Plant: plant discharging 500 to 1000 m^3 of wastewater per day
4. Type 4 Plant: plant discharging 50 to 500 m^3 of wastewater per day
5. Type 5 Plant: others.

(Note: The amount of wastewater is measured in terms of the plant capacity. If water is added to decrease the density of substances, the amount of water shall be added. If the facility treats domestic wastewater as well as industrial wastewater, the amount of domestic wastewater shall be added.)

- *Water-polluting Substance* - substances that cause water pollution including copper and its compounds, lead and its compounds, nickel and its compounds, colitis germs, manganese and its compounds, barium and its compounds, floating substances, bromine and its compounds, arsenic and its compounds, acids and alkalis, pigments, detergents, selenium and its compounds, mercury and its compounds, cyanide, zinc and its compounds, chloric compounds, organic materials, organic solvents, oil (including animal and vegetable oils), phosphoric compounds, tin and its compounds, nitric compounds, iron and its compounds, cadmium and its compounds, chromium and its compounds, fluoric compounds, phenol, and sulfur and its compounds.
- *Water Pollution Prevention Facilities* - facilities that remove or reduce the water-polluting substances from wastewater discharge facilities (see Appendix 10-2).

WATER QUALITY MANAGEMENT PROTOCOL GUIDANCE FOR WORKSHEET USERS

	REFER TO WORKSHEET ITEMS:	CONTACT THESE PERSONS OR GROUPS: (*)
All Installations	10-1 through 10-6	(1)(2)(3)(4)(13)(14)(22)
Wastewater Treatment Plant or Discharge Facility	10-7 through 10-15	(2)(14)

(*)CONTACT/LOCATION CODE:

- (1) Directorate of Engineering and Housing (DEH)
- (2) Environmental Coordinator (EC)
- (3) Preventive Medicine Officer
- (4) Safety and Health Officer
- (13) Engineering, Plans, and Services (EP&S)
- (14) Wastewater Treatment Plant Supervisor (O&M)
- (22) Staff Judge Advocate

**COMPLIANCE CATEGORY:
WATER QUALITY MANAGEMENT
Republic of Korea**

REGULATORY REQUIREMENTS	REVIEWER CHECKS:
<p>ALL INSTALLATIONS</p> <p>10-1. Determine actions or changes since previous review of water quality management (GMP).</p> <p style="text-align: center;">...</p> <p>10-2. Copies of all relevant laws and regulations on water quality management should be maintained at the installation (GMP).</p> <p style="text-align: center;">...</p> <p>10-3. Certain National government environmental standards for water quality must be met (Presidential Decree to Implement the Environmental Policy Fundamental Law, Article 2).</p> <p style="text-align: center;">...</p> <p>10-4. Installations are required to obtain permission prior to the construction or modification of any wastewater discharge facility (Water Environment Preservation Law, Article 10; Decree of the Prime Minister to Implement the Water Environment Preservation Law, Article 11; Presidential Decree to Implement the Water Environment Preservation Law, Article 2).</p> <p style="text-align: center;">...</p>	<p>Obtain a copy of previous report and determine if noncompliance issues have been resolved. (1)(2)</p> <p style="text-align: center;">...</p> <p>Determine if copies of the following regulations are maintained and kept current at the installation: (1)(2)(22)</p> <ul style="list-style-type: none"> - <i>Environmental Policy Fundamental Law.</i> - <i>Presidential Decree to Implement the Environmental Policy Fundamental Law.</i> - <i>Public Health Act.</i> - <i>Water Environment Preservation Law.</i> - <i>Presidential Decree to Implement the Water Environment Preservation Law.</i> - <i>Decree of the Prime Minister to Implement the Water Environment Preservation Law.</i> <p style="text-align: center;">...</p> <p>Verify that the National standards for water quality (Appendices 10-3, 10-4, and 10-5) are complied with at the installation. (2)(3)(4)(13)</p> <p>(NOTE: Underground water is required to meet the potable water standard found in Appendix 10-3).</p> <p style="text-align: center;">...</p> <p>Determine if the installation is in the process or has plans to construct or modify any wastewater discharge facility. (1)(2)(14)</p> <p>Confirm that the following information and documents were submitted to the Minister of Environmental Administration through the Mayor of the Special City of Seoul, mayors of cities under direct control of the National Government, or governors of the provinces: (1)(2)(14)</p> <ul style="list-style-type: none"> - form defined by the Decree of the Prime Minister - blueprint and detailed description of discharge facility - construction progress plan - predicted amount of raw materials (including fuels and water), products, and waste - blueprints and detailed descriptions of antipollution facilities - type and predicted discharge amount of hazardous waste (applies only to hazardous waste discharge plants) - blueprints on instruments to be used to measure amount of water used and planned locations. <p style="text-align: center;">...</p>

(1) Directorate of Engineering and Housing (DEH) (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (4) Safety and Health Officer (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (22) Staff Judge Advocate

**COMPLIANCE CATEGORY:
WATER QUALITY MANAGEMENT
Republic of Korea**

REGULATORY REQUIREMENTS	REVIEWER CHECKS:
<p>10-5. Installations that have obtained permission to construct or modify a discharge facility are also required to establish a treatment facility to reduce the discharged pollutants (Water Environment Preservation Law, Article 11; Decree of the Prime Minister to Implement the Water Environment Preservation Law, Articles 16 and 17).</p> <p>(NOTE: This is not required if: the Minister of the Environment Administration determines that pollutants are below permissible standards; if wastewater can be treated by physical/chemical facilities and does not exceed 5 m³ per day; or if wastewater is recycled for reuse in the discharge facilities.)</p> <p style="text-align: center;">...</p> <p>10-6. Installations are required to file a report to the Minister of the Environment Administration within 15 days of completing the construction or modification of the facility and are required to have the facility inspected (Water Environment Preservation Law, Article 14; Decree of the Prime Minister to Implement the Water Environment Preservation Law, Article 25).</p> <p style="text-align: center;">...</p>	<p>Verify that a treatment facility has been designed and constructed to reduce the discharge pollutants to within the permissible discharge standards. (2)(14)</p> <p style="text-align: center;">...</p> <p>Verify that a report has been filed. (1)(2)(14)</p> <p>Verify that the facility has been inspected. (1)(2)(14)</p> <p style="text-align: center;">...</p>

(1) Directorate of Engineering and Housing (DEH) (2) and Health Officer (13) Engineering, Plans, and Service Judge Advocate

Environmental Coordinator (EC) (3) Preventive Medicine Officer (4) Safety (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (22) Staff

**COMPLIANCE CATEGORY:
WATER QUALITY MANAGEMENT
Republic of Korea**

REGULATORY REQUIREMENTS	REVIEWER CHECKS:
<p>WASTEWATER TREATMENT PLANT OR DISCHARGE FACILITY</p> <p>10-7. Installations that operate wastewater discharge facilities are required to meet certain discharge standards (Water Environment Preservation Law, Article 8; Decree of the Prime Minister to Implement the Water Environment Preservation Law, Article 8).</p> <p style="text-align: center;">...</p> <p>10-8. Installations with wastewater discharge or treatment facilities are required to submit a report whenever any cessation in the facilities operations occurs (Presidential Decree to Implement the Water Environment Preservation Law, Article 7).</p> <p style="text-align: center;">...</p> <p>10-9. Installations that own wastewater discharge and/or treatment facilities, or generate wastewater are required to appoint a Manager of Discharge Facilities (Water Environment Preservation Law, Article 23; Presidential Decree to Implement the Water Environment Preservation Law, Article 19).</p> <p style="text-align: center;">...</p>	<p>Verify that the standards in Appendix 10-6 are maintained. (2)(14)</p> <p style="text-align: center;">...</p> <p>Confirm that a self report and improvement plan was submitted to the administrator of the Environment Administration whenever breakdowns or maintenance of the facilities has occurred. (2)(14)</p> <p>Examine the improvement plan and self report, and verify that it contains the following: (2)(14)</p> <ul style="list-style-type: none"> - details on the defect/trouble with facilities - schedule for repair and improvement - schedule for suspension or limited operation of facilities during improvement period - specification of new technology used to reduce pollution discharge. <p style="text-align: center;">...</p> <p>Verify that a manager has been appointed at the installation. (2)(14)</p> <p>Verify that the manager meets the criteria outlined in Appendix 10-7. (2)(14)</p> <p style="text-align: center;">...</p>

(1) Directorate of Engineering and Housing (DEH) (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (4) Safety and Health Officer (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (22) Staff Judge Advocate

**COMPLIANCE CATEGORY:
WATER QUALITY MANAGEMENT
Republic of Korea**

REGULATORY REQUIREMENTS	REVIEWER CHECKS:
<p>10-10. Discharge facility managers are required to perform certain duties (Decree of the Prime Minister to Implement the Water Preservation Law, Article 38).</p> <p style="text-align: center;">...</p>	<p>Verify that the manager is responsible for the following items: (2)(14)</p> <ul style="list-style-type: none"> - management of discharge/prevention facilities - improvement of discharge/prevention facilities - preparation and maintenance of operation records - self-monitoring of facilities and preparation and maintenance of monitoring records - any other items as may be required by the Mayor/Governor or the head of the local Environment Administration. <p style="text-align: center;">...</p>
<p>10-11. Installations with wastewater discharge and treatment facilities are required to designate an individual to monitor facilities and maintain records (Water Environment Preservation Law, Article 22; Decree of the Prime Minister to Implement the Water Environment Preservation Law, Article 36).</p> <p style="text-align: center;">...</p>	<p>Verify that a monitoring agent is designated. (2)(14)</p> <p>Verify that records are made for each item and at each occurrence. (2)(14)</p> <p>Verify that monitoring is performed as specified in Appendix 10-8. (2)(14)</p> <p>Verify that records are maintained for at least 3 years (yr). (2)(14)</p> <p style="text-align: center;">...</p>
<p>10-12. Installations with wastewater discharge and treatment facilities are required to keep certain records (Water Environment Preservation Law, Article 15; Decree of the Prime Minister to Implement the Water Environment Preservation Law, Article 26).</p> <p style="text-align: center;">...</p>	<p>Verify that records are kept as follows: (2)(14)</p> <ul style="list-style-type: none"> - operation hours - volume of water-polluting substances discharged - volume of chemicals used for processing - names of facility managers. <p>Verify that the records are kept for 3 yr. (2)(14)</p> <p style="text-align: center;">...</p>

(1) Directorate of Engineering and Housing (DEH) (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (4) Safety and Health Officer (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (22) Staff Judge Advocate

**COMPLIANCE CATEGORY:
WATER QUALITY MANAGEMENT
Republic of Korea**

REGULATORY REQUIREMENTS	REVIEWER CHECKS:
<p>10-13. Installations with wastewater discharge facilities are required to make any improvements ordered by the Minister of the Environment within 1 yr when permissible discharge standards are exceeded (Water Environment Preservation Law, Article 16; Decree of the Prime Minister to Implement the Water Preservation Law, Article 28).</p> <p style="text-align: center;">...</p>	<p>Determine if the installation is required to make any improvements. (2)(14)</p> <p>Verify that improvements were made within 1 yr. (2)(14)</p> <p>(NOTE: The Mayor/Governor or the head of the local Environment Administration may extend the deadline for 6 months (mo) upon request by the installation.)</p> <p style="text-align: center;">...</p>
<p>10-14. Technical engineers at wastewater treatment facilities and managers of discharge facilities are required to attend educational classes (Water Environment Preservation Law, Article 48; Decree of the Prime Minister to Implement the Water Environment Preservation Law, Article 58).</p> <p style="text-align: center;">...</p>	<p>Verify that technical engineers and managers attend class at least once every 3 yr. (2)(14)</p> <p style="text-align: center;">...</p>
<p>10-15. Installations that operate sewage, wastewater, or night soil treatment facilities are required to meet certain discharge standards (Decree of the Prime Minister to Implement the Water Environment Preservation Law, Article 40; Presidential Decree to Implement the Water Environment Preservation Law, Article 24).</p>	<p>Verify that the standards in Appendix 10-9 are maintained. (2)(14)</p>

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Appendix 10-1

Water Pollutant Discharge Facilities

- Industrial chemical product manufacturing facility
- Other chemical product manufacturing facility
- Rubber/plastic product manufacturing facility
- Primary metal manufacturing facility
- Metal product/machine manufacturing facility
- Petroleum refining facility
- Leather product manufacturing facility
- Food manufacturing facility
- Marine product saling facility
- Beverage manufacturing facility
- Fabric product manufacturing facility
- Paper product and tobacco manufacturing facility
- Non metal mineral product (excluding those related with petroleum or coal) manufacturing facility
- Transportation facility
 1. washing facility
 - area: 20 square meters (m^2) or larger or
 - water usage: $2 m^3$ /day or more
 2. repairing facility
 - area: $230 m^2$ or larger
 3. gliding (plating) facility
 - size: $0.1 m^3$ or larger
 4. lubricant-changing facility
 - total length of dock: 2 meters (m) or more
- Laundry facility
 1. washing equipment
 - size: $2 m^3$ or larger or
 - water usage: $1 m^3$ /hour or more
- Coal mining facility
- Metal mining facility
- Other mining facility
- Printing facility
 1. washing equipment
 - size: $1 m^3$ or larger or
 - water usage: $0.5 m^3$ /hour or more
 2. grinding equipment
 - power: 3 Horse Power or more
 3. photographic plat making equipment
 - manually operated equipment (size: $0.1 m^3$ or larger)
 - one or more automatic equipment
 4. gliding (plating) equipment
 - size: $0.1 m^3$ or larger

Appendix 10-1 (continued)

- Photography processing facility
 1. one or more automatic developing equipment
 2. one or more automatic printing equipment
- Social service facility (educational, health, medical, research facilities, etc.)
- Printing facility
 1. hospital facility
 - size: 80 beds or more
 2. x-ray processing facility
 - two or more x-ray processing equipment
- Livestock farming facility
- Electricity facility
 1. steam power generating facility
 - capacity: 100,000 kilowatts (kw)/h or greater
- Wastewater treatment facility
 1. wastewater storing facility
 - capacity: 1 m³ or larger
- All facilities listed above
 1. water-filtering facility
 - capacity: 100 m³/day or more
 2. physico-chemical experiment facility
 - size: 100 m² or larger
 3. waste gas washing facility or water-using dust treatment facility
 - water usage: 0.1 m³/h or more
 4. consigned wastewater storing facility
 - size: 0.1 m³/day or more
- Other facilities
 1. Special facility - any facility that releases 0.1 m³/h or more of wastewater containing "specified water-polluting hazardous material" or heavy metal; however, the criteria shall be 0.1 m³/h or more in the area prescribed as "Potable Water Protection Area" under Article 3 of the Water Works Law, which is announced by the Minister of Environment Administration in the Official Gazette or in its vicinity.
 2. Ordinary facility - any facility that releases, beyond the permissible standards, 1 m³/h or more of wastewater that contains neither "specified water-polluting hazardous material" nor heavy metal; however, the criteria shall be 2 m³ or more in the area prescribed as "Portable Water Protection Zone" under Article 2 of the *Water Works Law*, which is announced by the Minister of Environment Administration in the Official Gazette or in its vicinity.

(NOTE: In cases where the size of a discharge facility is less than or equal to twice the set criteria and wastewater without any "specified water-polluting hazardous material"/heavy metal/mineral oil is channeled to a terminal treatment facility as prescribed in Article 2-5 of the *Sewerage System Law*, the facility shall not be considered a water pollutant discharge facility.)

Appendix 10-2

Water Pollution Prevention Facilities

1. Physical treatment facility.

- a. screen
- b. grinder
- c. sand sedimenting facility
- d. oil/water separating facility
- e. device checking oil quantity (water reservoir)
- f. mixing facility
- g. congealing facility
- h. settling facility
- i. floating facility
- j. filtering facility
- k. dehydrating facility
- l. drying facility
- m. distilling facility
- n. condensing facility

2. Chemical treatment facility

- a. chemical sedimentation facility
- b. neutralizing facility
- c. attaching facility
- d. sterilizing facility
- e. ion exchanging facility
- f. incinerating facility
- g. oxidation facility
- h. reduction facility
- i. sediments improving facility

3. Biochemical treatment facility

- a. trickling-filtration facility
- b. aeration facility
- c. oxidation facility (oxidation basin or oxidation reservoir)
- d. anaerobic/aerobic digestion facility
- e. contact tank
- f. stabilization tank

4. Other facilities approved by the Minister of Environment Administration

Appendix 10-3

Environmental Standards for Water Quality

River System

Categories	Grade	Utility	pH	Biochemical Oxygen Demand (BOD) in milligrams/ liter (mg/L)	Floating Substances SS in mg/L	Amount of Dissolved Oxygen (DO) in mg/L	# of Colitus Germes MPN/100 milliliters (mL)
Living environment	I	First class potable water source. Natural environment preservation.	6.5 - 8.5	1 or less	25 or less	7.5 or more	50 or less
	II	Second class potable water source. First class fishing source. Swimming place.	6.5 - 8.5	3 or less	25 or less	5 or more	1000 or less
	III	Third class potable water source. Second class fishing source. First class industrial water source.	6.5 - 8.5	6 or less	25 or less	5 or more	5000 or less
	IV	Second class industrial water source. Agricultural water source.	6.0 - 8.5	8 or less	100 or less	2 or more	- - -
	V	Third class industrial water source. Living environment preservation.	6.0 - 8.5	10 or less	No floating refuse	2 or more	- - -

Appendix 10-3 (continued)

River System

Categories	Grade	Standards		
Protection of human health	All except agricultural water source.	Cd: 0.01 mg/L or less Hg: none Hexavalent chromium: 0.05 mg/L or less Negative ion source Active agent	As: 0.05 mg/L or less Organic phosphor: None (ABS): 0.05 mg/L or less	CN: None Pb: 0.1 mg/L or less PCB: none

NOTES:

- * Natural environment preservation: area where special environment preservation measures (i.e., preservation of natural scenery) are especially needed.
- * 1st class potable water source: water that requires a simple treatment such as filtering.
- * 2nd class potable water source: water that requires an ordinary treatment such as sedimenting/filtering.
- * 3rd class potable water source: water that requires an elaborated treatment.
- * 1st class industrial water source: water that requires an ordinary treatment such as sedimenting.
- * 2nd class industrial water source: water that requires an elaborated treatment such as chemical treatment.
- * 3rd class industrial water source: water that requires a special treatment.
- * Living environment preservation: the state of environment that does not cause unpleasantness in daily activities.

Appendix 10-4

Environmental Standards for Water Quality

Lakes/Marshes

Category	Grade	Utility	pH	COD (mg/L)	SS (mg/L)	DO (mg/L)	MPN (MPN/ 100 mL)	Total phosphor (mg/L)	Total nitrogen (mg/L)
Living environ- ment	I	First class potable water source. Natural environment preservation.	6.5 thru 8.5	1 or less	1 or less	7.5 or more	50 or less	0.01 or less	0.2 or less
	II	Second class potable water source. First class fishing source. Swimming place.	6.5 thru 8.5	3 or less	5 or less	5 or more	1000 or less	0.03 or less	0.4 or less
	III	Third class potable water source. Second class fishing source. First class industrial water source.	6.5 thru 8.5	6 or less	15 or less	5 or more	5000 or less	0.05 or less	0.6 or less
	IV	Second class industrial water source. Agricultural water source.	6.0 thru 8.5	8 or less	15 or less	2 or more	- - -	0.1 or less	1.0 or less
	V	Third class industrial water source. living environ- ment preservation.	6.0 thru 8.5	10 or less	No floating refuse	2 or more	- - -	0.15 or less	1.5 or less

Appendix 10-4 (continued)

Lakes/Marshes

Categories	Grade	Standards		
Protection of human health	All except agricultural water source.	Cd: 0.01 mg/L or less Hg: none Hexavalent chromium: 0.05 mg/L or less	As: 0.05 mg/L or less Organic phosphor: none	CN: none Pb: 0.1 mg/L or less PCB: none

NOTES:

- * When the ratio of total nitrogen to total phosphor is 7 or less, the standard for total phosphor is not applied. When the ratio is 16 or greater, the standard for total nitrogen is not applied.
- * Natural environment preservation: area where special environment preservations (i.e., preservation of natural scenery) are especially needed.
- * 1st class potable water source: water that requires a simple treatment such as filtering.
- * 2nd class potable water source: water that requires an ordinary treatment such as sedimenting/filtering.
- * 3rd class potable water source: water that requires an elaborated treatment.
- * 1st class industrial water source: water that requires an ordinary treatment such as sedimenting.
- * 2nd class industrial water source: water that requires an elaborated treatment such as chemical treatment.
- * 3rd class industrial water source: water that requires a special treatment.
- * Living environment preservation: the state of environment that does not cause unpleasantness in daily activities.

Appendix 10-5

Environmental Standards For Water Quality

Coast

Class	pH	COD (mg/L)	DO (%)	SS (mg/L)	MPN (MPN/ 100mL)	Normal nucleic acid (mg/L)	Total nitrogen (mg/L)	Total phosphor (mg/L)
I	7.8 - 8.3	1 or less	95 or greater	10 or less	200 or less	None	0.05 or less	0.007 or less
II	6.5 - 8.5	2 or less	85 or greater	25 or less	1000 or less	None	.1 or less	0.015 or less
III	6.5 - 8.5	4 or less	80 or greater	---	---	---	0.2 or less	0.03 or less

Class	Standards		
All	Hexavalent chromium: 0.05 mg/L or less Pb: 0.1 mg/L or less Zn: 0.1 mg/L or less Organic phosphor: none	As: 0.05 mg/L or less Cu: 0.02 mg/L or less Hg: none	Cd: 0.01 mg/L or less CN: none PCB: none

NOTES:

- * When DO is expressed in density, Class I should be 6 mg/L or greater; Class II and III should be 5 mg/L or greater.
- * Class I refers to the water quality that is appropriate for habitation, raising, and spawning of marine life.
- * Class II refers to the water quality that sustains marine life and allows for swimming and other leisure activities.
- * Class III refers to the water quality that allows industrial water supply, port facilities, etc.
- * Total nitrogen refers to the sum of NO₂-N, NO₃-N, and NH₃-N.
- * Phosphor refers to PO₄-P.

Appendix 10-6

Permissible Discharge Standards

1. Biochemical oxygen demand (BOD), Chemical oxygen demand (COD), and amount of floating substance (SS).

1) Until 31 December 1995

Area	Facility discharging wastewater (more than 3000 m ³ per day)			Facility discharging wastewater (less than 3000 m ³ per day)		
	BOD (mg/L)	COD (mg/L)	SS (mg/L)	BOD (mg/L)	COD (mg/L)	SS (mg/L)

CLEAN AREA:

area announced
by the Minister of
Environment
Administration in
the Official
Gazette to affect
the water quality
of river system
that shall keep
the First Grade
Water Standard.

50	50	50	50	50	50
or less	or less	or less	or less	or less	or less

"KA" (*meaning
"category I")

AREA:

area announced
by the Minister of
Environment
Administration in
the Official
Gazette to affect
the water quality
of river system
that shall keep
the Second Grade
Water Standard.

80	80	80	100	100	100
or less	or less	or less	or less	or less	or less

"NA" (*meaning
"category II")

AREA:

area announced
by the Minister of
Environment

Appendix 10-6 (continued)

Area	Facility discharging wastewater (more than 3000 m ³ per day)			Facility discharging wastewater (less than 3000 m ³ per day)		
	BOD (mg/L)	COD (mg/L)	SS (mg/L)	BOD (mg/L)	COD (mg/L)	SS (mg/L)
Administration in the Official Gazette to affect the water quality of river system that shall keep the Third, Forth, and Fifth Grade Water Standard.	100 or less	100 or less	100 or less	150 or less	150 or less	150 or less
SPECIAL AREA: "Industrial complex wastewater terminal treatment area" designated by the Minister of Environment Administration, or "Agricultural/ Industrial complex" designated by the mayor or county head in accordance with Article 8 of the Industrial Location and Development Act.	30 or less	50 or less	70 or less	30 or less	50 or less	70 or less

NOTES:

1. Permissible allowance for a discharge facility that intends to treat wastewater at a terminal treatment facility in accordance with Article 40 of this Decree and Article 20 of the Presidential Decree shall be announced by the Minister of Environment Administration in the Official Gazette by the request of a businessman who intends to build a terminal treatment facility.
2. The volume of wastewater shall refer to the volume that the facility is capable of discharging. In cases where water is added to liquid in order to lower the density or where wastewater is recycled, the volume of added water and recycled wastewater, respectively, shall be considered in the assessment of the volume of wastewater.

Appendix 10-6 (continued)

2) From 1 January 1996

Area	Facility discharging wastewater (more than 3000 m ³ per day)			Facility discharging wastewater (less than 3000 m ³ per day)		
	BOD (mg/L)	COD (mg/L)	SS (mg/L)	BOD (mg/L)	COD (mg/L)	SS (mg/L)

CLEAN AREA:

Area announced
by the Minister of
Environment
Administration in
The Official
Gazette to affect
the water quality
of river system
that shall keep
the First Grade
Water Standard.

30	40	30	40	50	40
or less	or less	or less	or less	or less	or less

"KA" (*meaning
"category I")

AREA:

area announced
by the Minister of
Environment
Administration in
the Official
Gazette to affect
the water quality
of river system
that shall keep
the Second Grade
Water Standard.

60	70	60	80	90	80
or less	or less	or less	or less	or less	or less

"NA" (*meaning
"category II")

AREA:

Area announced
by the Minister of
Environment
Administration in
the Official
Gazette to affect
the water quality
of river system
that shall keep
the Third, Forth,
and Fifth Grade

80	90	80	120	130	120
or less	or less	or less	or less	or less	or less

Appendix 10-6 (continued)

Area	Facility discharging wastewater (more than 3000 m ³ per day)			Facility discharging wastewater (less than 3000 m ³ per day)		
	BOD (mg/L)	COD (mg/L)	SS (mg/L)	BOD (mg/L)	COD (mg/L)	SS (mg/L)

Water Standard.

SPECIAL AREA:

"Industrial complex wastewater terminal treatment area "designated by the Minister of Environment Administration, or "Agricultural/Industrial complex" designated by the mayor or county head in accordance with Article 8 of the Industrial Location and Development Act.

30 or less	40 or less	30 or less	30 or less	40 or less	30 or less
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NOTES:

1. Permissible allowance for a discharge facility that intends to treat wastewater at a terminal treatment facility in accordance with Article 40 of this Decree and Article 20 of the Presidential Decree shall be announced by the Minister of Environment Administration in the Official Gazette by the request of a businessman who intends to build a terminal treatment facility.
2. The volume of wastewater shall refer to the volume that the facility is capable of discharging. In cases where water is added to liquid in order to lower the density or where wastewater is recycled, the volume of add water and recycled wastewater, respectively, shall be considered in the assessment of the volume of wastewater.

2. Polluting Substances

Category	Clean Area	"Ka" Area	"Na" Area	Special Area
Hydrogen ion density	5.8 - 8.6	5.8 - 8.6	5.8 - 8.6	5.8-8.6
Normal mineral oil nucleic (mg/L)	1 or less	5 or less	5 or less	5 or less
acid animal/vege. oil (mg/L)	5 or less	30 or less	30 less	30 less
Phenol (mg/L)	1 or less	5 or less	5 or less	5 or less
Cyanide (mg/L)	0.2 or less	1 or less	1 or less	1 or less

Appendix 10-6 (continued)

Category	Clean Area	"Ka" Area	"Na" Area	Special Area
Chromium (mg/L)	0.5 or less	2 or less	2 or less	2 or less
Soluble iron (mg/L)	2 or less	10 or less	10 or less	10 or less
Zinc (mg/L)	1 or less	5 or less	5 or less	
Copper (mg/L)	0.5 or less	3 or less	3 or less	3 or less
Cadmium (mg/L)	0.02 or less	0.1 or less	0.1 or less	0.1 or less
Mercury (mg/L)	None	0.005 or less	0.005 or less	0.005 or less
Organic phosphor (mg/L)	0.2 or less	1 or less	1 or less	1 or less
Arsenic (mg/L)	0.1 or less	0.5 or less	0.5 or less	0.5 or less
Lead (mg/L)	0.2 or less	1 or less	1 or less	1 or less
Hexavalent chromium (mg/L)	0.1 or less	0.5 or less	0.5 or less	0.5 or less
Soluble manganese (mg/L)	2 or less	10 or less	10 or less	10 or less
Fluorine (mg/L)	3 or less	15 or less	15 or less	15 or less
PCB (mg/L)	None	0.003 or less	0.003 or less	0.003 or less
Colitis germs (number/l)	100 or less	3000 or less	3000 or less	3000 or less
Chromaticity (degree)	200 or less	300 or less	400 or less	400 or less
Temperature (°C)	40 or less	40 or less	40 or less	40 or less
Total nitrogen (mg/L)	30 or less	60 or less	60 or less	60 or less
Total phosphor (mg/L)	4 or less	8 or less	8 or less	8 or less
Trichloroethylene (mg/L)	0.06 or less	0.3 or less	0.3 or less	0.3 or less
Tetrachloroethylene (mg/L)	0.02 or less	0.1 or less	0.1 or less	0.1 or less

NOTES:

1. Inspection of the volume may be exempted for the polluting substances: 1) that are not discharged at all from the facility, 2) that are confirmed to be discharged always within the permissible allowances, 3) the volume of which may be calculated from the volume of the other substance, and 4) that are announced by the Minister of Environment Administration in the Official Gazette.
2. Permissible standards for color shall be enforced only at fiber-manufacturing facility.
3. Criteria for classification of area are the same as those specified in the section of BOD, COD, and SS.
4. Permissible standards for total nitrogen and total phosphor shall be enforced in the lakes/marshes, which shall be designated by the Minister of Environment Administration starting 1 January 1996.
5. Permissible standards for trichloroethylene shall be enforced starting 1 January 1993.

Appendix 10-7

Qualification for Managers of Discharge Facilities

Types	Qualifications
Type 1 Plant	Water-specializing environmental engineer with Class 1 or higher certification.
Type 2 Plant	Water-specializing environmental engineer with Class 1 or higher certification.
Type 3 Plant	Water-specializing environmental engineer with Class 2 or higher certification.
Type 4 Plant	Person who acquired a permission of building discharge facility or employee working in the discharge or antipollution facilities designated by a person who acquired a permission of installing discharge facility.
Type 5 Plant	Person who acquired a permission of building discharge facility or employee working in the discharge or antipollution facilities designated by a person who acquired a permission of installing discharge facility.

NOTES:

1. In cases where specially defined hazardous substances are discharged in Type 4 or 5 Plants, qualifications for Type 3 Plant shall be applied (This, however, does not apply to plants if the amount of discharged water is equal to or less than 5 m³ per day).
2. In cases where average operating hours of the facility per actual operating day in a month exceeds 17 h, more than one manager shall be appointed. In this case, qualifications for Type 3 Plants may be applied to additional managers.
3. In cases where the total volume of polluting substances at the joint-treatment facility is pertinent to Type 4 or Type 5 Plants, qualifications for Type 3 Plants shall be applied.
4. Qualifications for Type 5 Plants may be applied to the plant that is exempted from the obligation of installing an antipollution facility or the plant that disposes of polluting substances at a cooperative antipolluting facility.

Appendix 10-8

Objects, Items, and Methods for Self-Monitoring

Size of Facility	Objects Monitored	Monitoring Frequency
Wastewater discharge 3000 m ³ or more per day	Hydrogen power (pH) Biological oxygen demand (BOD) Volume of floating substance (SS) Specified polluting substances	Once a week or more
Wastewater discharge 1000 m ³ or more but less than 3000 m ³ per day	Same as above	Once a week or more
Wastewater discharge 500 m ³ or more but less than 1000 m ³ per day	Same as above	Twice a month or more
Wastewater discharge 50 m ³ or more but less than 500 m ³ per day	Same as above	Once a month or more
Other	Same as above	Once a quarter or more

NOTES:

1. In cases where a discharge facility that is required to carry out a self-monitoring once or less a month frequently generates a specified polluting substance, it shall carry out self-monitoring twice or more a month regardless of the size of the discharge facility; however, this requirement does not apply to the facility that generates wastewater less than 5 m³ per day.
2. Frequency of self-monitoring shall be determined based on the volume of wastewater discharged from each discharge pipe.
3. Self-monitoring may be exempted for those facilities that: a) are exempt from building a treatment facility, b) recycle the whole wastewater, or c) treat wastewater at a cooperative treatment facility or a sewage terminal treatment facility.
4. A discharge facility with an instrument that automatically measures the required parameter shall be considered to be carrying out a self-monitoring of the parameter concerned.

Appendix 10-9

Permissible Standards for Discharge Water

1. Until 31 December 1995

Facility	Biological oxygen demand (mg/L)	Chemical oxygen demand (mg/L)	Floating substance demand (mg/L)	Others (mg/L)
Night soil terminal treatment facility	40 or less		70 or less	
Sewage terminal treatment facility	30 or less		70 or less	
Wastewater terminal treatment facility	30 or less	50 or less	70 or less	<p>pH: 5 - 9</p> <p>Normal nucleic acid</p> <p>mineral oil: < or = 5</p> <p>animal/vegetable oil: < or = 30</p> <p>Phenol: < or = 5</p> <p>Cyanide: < or = 1</p> <p>Chromium: < or = 2</p> <p>Iron: < or = 10</p> <p>Zinc: < or = 5</p> <p>Copper: < or = 3</p> <p>Cadmium: < or = 0.1</p> <p>Mercury: < or = 0.005</p> <p>Organic phosphor: < or = 1</p> <p>Arsenic: < or = 0.5</p> <p>Lead: < or = 1</p> <p>Hexavalent chromium: < or = 0.5</p> <p>Soluble manganese: < or = 10</p> <p>Fluorine: < or = 15</p> <p>PCB: < or = 0.003</p> <p>Trichloroethylene: < or = 0.3</p> <p>Tetrachloroethylene: < or = 0.1</p> <p>Temperature: < or = 40 °C</p>

(NOTE: Standards for Trichloroethylene and Tetrachloroethylene shall be enforced starting 1 January 1993.)

Appendix 10-9 (continued)

2. From 1 January 1996

Facility	Biological oxygen demand (mg/L)	Chemical oxygen demand (mg/L)	Floating substance demand (mg/L)	Others (mg/L)
Night soil terminal treatment facility	30 or less		30 or less	Total nitrogen: < or = 120 Total phosphor: < or = 16
Sewage terminal treatment facility	20 or less		20 or less	Total nitrogen: < or = 60 Total phosphor: < or = 8
Wastewater terminal treatment facility	30 or less	40 or less	30 or less	pH: 5 - 9 Normal nucleic acid mineral oil: < or = 5 Animal/vegetable oil: < or = 30 Phenol: < or = 5 Cyanide: < or = 1 Chromium: < or = 2 Iron: < or = 10 Zinc: < or = 5 Copper: < or = 3 Cadmium: < or = 0.1 Mercury: < or = 0.005 Organic phosphor: < or = 1 Arsenic: < or = 0.5 Lead: < or = 1 Hexavalent chromium: < or = 0.5 Soluble manganese: < or = 10 Fluorine: < or = 15 PCB: < or = 0.003 Trichloroethylene: < or = 0.3 Tetrachloroethylene: < or = 0.1 Temperature: < or = 40 °C Total nitrogen: < or = 120 Total phosphor: < or = 16

(NOTE: Permissible standards for total nitrogen and total phosphor shall be enforced in the lakes/marshes, which shall be designated by the Minister of Environment Administration.)

INSTALLATION:	COMPLIANCE CATEGORY: Water Quality Management Republic of Korea	DATE:	REVIEWER(S):
STATUS NA C RMA	REVIEWER COMMENTS:		

(1) Directorate of Engineering and Housing (DEH) (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (4) Safety and Health Officer (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (22) Staff Judge Advocate

SECTION 11

MANAGEMENT

SECTION 11

MANAGEMENT

A. Applicability

This protocol applies to all U.S. Armed Forces installations in the Republic of Korea. Currently, this section contains protocols for environmental program management activities, based on Korean regulations.

B. National Laws and Regulations

- *Environmental Policy Fundamental Law* (Law No. 4257, 1 August 1990)
- *Presidential Decree to Implement the Environmental Policy Fundamental Law*

C. Provincial Laws and Regulations

None

D. Key Compliance Definitions

- *Special Counter Measure Areas (or "Zones")* - areas prescribed in Article 22 of the Environment Policy Fundamental Law. In these areas, the Minister of Environment Administration may prescribe and impose more rigid permissible discharge standards for new discharge facilities than those standards prescribed for wastewater discharge facilities not in special countermeasures zones.

MANAGEMENT PROTOCOL GUIDANCE FOR WORKSHEET USERS

	REFER TO WORKSHEET ITEMS:	CONTACT THESE PERSONS OR GROUPS: (*)
All installations	11-1 through 11-3	(1)(2)(26)

(*)CONTACT/LOCATION CODE:

- (1) Directorate of Engineering and Housing (DEH)
- (2) Environmental Coordinator (EC)
- (26) Master Planner (DEH)

**COMPLIANCE CATEGORY:
MANAGEMENT
Republic of Korea**

REGULATORY REQUIREMENTS	REVIEWER CHECKS:
<p>ALL INSTALLATIONS</p> <p>11-1. The Minister of the Environment Administration is required to prepare a Master Plan for environmental preservation (Environmental Policy Fundamental Law, Article 12).</p> <p style="text-align: center;">...</p> <p>11-2. The Minister of the Environment Administration may designate a Special Counter Measure Area (Environmental Policy, Fundamental Law, Article 22).</p> <p style="text-align: center;">...</p> <p>11-3. Installations may be required to prepare a paper on environmental impact assessment if they perform certain activities (Environmental Policy Fundamental Law, Article 26; Presidential Decree to Implement the Environmental Policy Fundamental Law, Article 7).</p>	<p>Verify that the installation has a copy and is in compliance with the most recent Master Plan. (1)(2)(26)</p> <p style="text-align: center;">...</p> <p>Determine if the installation contains any areas designated as Special Counter Measure Areas. (1)(2)</p> <p>Confirm that the installation is in compliance with the Special Master Counter-Plan that has been established for the Special Area. (1)(2)</p> <p style="text-align: center;">...</p> <p>Determine if the installation performs or is planning any of the following: (1)(2)</p> <ul style="list-style-type: none"> - developing an urban area - creating industrial sites - developing energy - constructing roads or ports - developing water resources - engaging in any other activity deemed by presidential decree to impact the environment. <p>Confirm that if any above activities are performed, the administrator of the Environment Administration has reviewed the proposed activities and that the recommended measures and adjustments specified are carried out in cooperation with the Central Environment Preservation Advisory Committee. (1)(2)</p>

(1) Directorate of Engineering and Housing (DEH) (2) Environmental Coordinator (EC) (26) Master Planner (DEH)

INSTALLATION:	COMPLIANCE CATEGORY: Management Republic of Korea	DATE:	REVIEWER(S):
STATUS NA C RMA	REVIEWER COMMENTS:		

(1) Directorate of Engineering and Housing (DEH) (2) Environmental Coordinator (EC) (26) Master Planner (DEH)